THE INFLUENCE OF CONSUMPTION GOALS ON DECISION PROCESSING AND CHOICE

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THE INFLUENCE OF CONSUMPTION GOALS ON DECISION PROCESSING AND CHOICE

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[To the students of the Georgia Institute of Technology]

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SUMMARY

My research examines how active consumption goals, defined as the benefits sought by the consumer, influence cognitive processes and decision outcomes. I address two common issues pertinent to consumer decisions. Consumers often face choices in which information is not readily available—requiring them to retrieve details from memory. Furthermore, consumer choices frequently happen following their weighting of decision attributes, sometimes leading to negative outcomes and consequences. In two essays, I study how the activation of consumption goals can influence the manner in which decision-relevant information is encoded into memory, and also influence the weighting of decision attributes in subsequent choice, which affects decision outcomes.

The first essay explores the effects of goal activation and goal framing on memory for information in a consumer-decision setting. Findings of two studies reveal that successful retrieval of product attribute information depends jointly on the valence of information and its instrumentality to active consumption goals. Further, my third study shows the effects of valence and relevance on memory are not merely the result of additional attention. My fourth study explores how induced elaboration can improve memory for less-instrumental attributes. My results highlight the need for marketers to understand consumers' goals, as negative information about those goals may be more influential on subsequent choice, while other negative information may be ignored or not encoded.

The second essay examines the consequences when decision makers identify their consumption goals before making a choice. Drawing from the principles of context

matching and means-end laddering, I argue that asking consumers to explicitly state their consumption goals in advance of a decision will lead them to incorporate those goals more directly in the ensuing decision process. In a series of experiments, I demonstrate the benefits of goal elicitation and trace its operation to the weighting of decision attributes rather than effort or expectations. I also show that the benefits of goal elicitation attenuate (or reverse) when elicitation is incomplete, and when goals cannot be effectively mapped onto decision attributes.

CHAPTER 1

INTRODUCTION

A common measure of successful decision making is the degree of progress toward one or more goals (Keeney & Raiffa, 1993). In a broad sense, most people consider it important to establish and pursue goals for themselves, and a considerable amount of research has been dedicated to behavioral and decision goals. However, consumption goals in particular have received less attention in marketing research. For the purpose of this proposal, *consumption goals* refer to the desired benefits or outcomes the consumer hopes to fulfill by making a choice (van Osselaer et al., 2005). These goals can be activated in a number of ways, both explicitly and implicitly. In the present research, I examine scenarios in which the consumer is formally prompted to consider his or her goals, as well as cases in which the goals are activated through *abstraction* – i.e., when product attributes lead to the consideration of higher-level benefits or goals. My primary focus is how goal activation affects consumer memory, decision quality, and satisfaction.

Effects of Goal Activation on Memory

When choosing among products with multiple attributes, it may not always be possible to make direct comparisons between product alternatives. In those cases, it is important that the consumer be able to retrieve attribute information from memory in order to make mental comparisons, and (ultimately) to choose between products. This information is more likely to be encoded and retrieved if it can be linked to an existing knowledge structure (O'Brien & Myers, 1987). In Chapter 2, I examine consumption goals as a type of knowledge structure and theorize that consumer encoding of information is jointly influenced by attribute valence and instrumentality to consumption goals; specifically, among high-instrumentality attributes, encoding is more likely for

negative information. This bias in the encoding of negative, goal-relevant information is not driven merely by attention or rehearsal, but rather by compounded elaboration for attributes that fail to provide highly-desirable benefits.

Effects of Goal Activation on Decision Outcomes

Even when memory limitations are not a concern, an error in selection can lead to negative outcomes such as dissatisfaction, disutility, and poor use of resources (Milkman, Chugh, & Bazerman, 2009). As a result, there exists a wide array of suggested methods to help consumers make better decisions, falling along a spectrum from the use of "gut instinct" to careful, analytical evaluation of alternatives (Hoyer, 1984). In my second essay, Chapter 3, I explore changes in consumer satisfaction and objective decision quality when consumption goals are explicitly identified in advance through an elicitation process. I expect consumption goal elicitation to fundamentally change the weighting of decision attributes, often leading to better and more satisfying choices. However, in cases where the consumer does a weak or ineffective job of identifying his or her consumption goals, or in cases where attributes cannot be effectively weighted to achieve the desired goals, I show that the beneficial effects of goal activation attenuate.

In the chapters that follow, I explore the impact of goal activation on memory and decision outcomes. My theories are supported by a series of studies, and I offer theoretical and managerial implications.

CHAPTER 2

INSTRUMENTALITY, VALENCE, AND THE ENCODING OF ATTRIBUTES IN CONSUMER DECISIONS

Introduction

The vast majority of consumer decisions involve retrieval of information stored in memory, and the topic of consumer memory has received considerable research attention (Bettman, 1979b; Lynch & Srull, 1982). Imagine a full day spent shopping for an automobile. Although a good deal of research can be done online, it is usually necessary to actually see the car, test drive it, and make other evaluations "in person." Over the course of traveling from dealership to dealership and automobile to automobile, many different features—good and bad, varying in their importance—will be encountered. Later, when the different alternatives are compared from memory, which attributes are likely to be remembered – and remembered correctly? Will only good features be encoded (for the purpose of choosing the "best" automobile), or are bad attributes also likely to be stored in memory (to avoid making a mistake)? Are the most important attributes the only ones that will be stored in memory, or might some novel, less-important features also remain?

Prior work has produced widespread evidence for two assertions that are especially pertinent to my research, namely, that encoding and retrieval of attribute information are affected by 1) consumer goals at the time of encoding, and 2) the valence of the attribute information itself. However, existing research has tended to consider these two factors in isolation. In contrast to such one-factor accounts, my research reveals how both factors interact to influence the way that consumers elaborate on attribute

information and encode it into memory. In particular, I demonstrate the interactive process in which encoding and retrieval of attribute information during a consumer decision depend jointly on its valence and instrumentality for achieving consumption goals. In what follows, I explore the interaction, examine an alternative explanation, and conclude with recommendations for utilizing my findings when designing marketing communications.

Background

Consumption Goals, Attention, and Elaboration

My proposed process begins with the assumption that during the course of the decision process, a consumer with pre-existing product category knowledge and consumption goals is exposed to product attribute information. It is commonly accepted that memory formation and retrieval are goal-directed, such that memory is stronger for information that passes some standard of goal-relevance (Altmann & Trafton, 2002; Biehal & Chakravarti, 1982; Lynch & Srull, 1982). Applying this principle to the context of consumer decision processing, I focus on consumption goals (distinct from behavioral or decision goals), defined broadly as the benefits that that the consumer seeks to achieve through consumption (e.g., van Osselaer et al. (2005)). For example, an automobile shopper may have goals related to fuel efficiency, speed, comfort, etc. Consumption goals can be acquired through a variety of routes, both internal and external (e.g., active deliberation, accumulated experience, recommendations of others, vicarious learning). Particularly relevant to my discussion are those attributes which serve as a means to an end, or which lead to a clear understanding of the benefits provided; these are known as

instrumental attributes (Cohen, 1979; Lefkoff-Hagius & Mason, 1993; Swan & Combs, 1976). The instrumentality of a given attribute actually depends upon the decision maker's desired benefits.

Extant theory and findings clearly suggest that product attribute information is more likely to be attended to, elaborated on, and encoded into memory when it is more instrumental to consumption goals. A long line of research has demonstrated that information instrumental to active goals receives greater attention. In some cases, instrumental information may be attended to spontaneously, without effort or even awareness (Bargh & Chartrand, 1999; Bargh, Chen, & Burrows, 1996; Shah & Kruglanski, 2002). In other cases, attention is volitional, such that an individual screens the stimuli that they encounter for information that is instrumental to his or her goals. For individuals engaged in a decision process, goals guide attention toward features or attributes that can help achieve those goals (Allport, 1987; Hommel, Müsseler, Aschersleben, & Prinz, 2001). As a result, information that is highly instrumental to goals receives greater attention, while low-instrumentality information receives proportionally less attention.

Beyond simply attending more to instrumental information, consumers will also tend to process this information more thoroughly. Such selective elaboration is consistent with the principle that working memory and cognitive resources are limited, so that consumers must be discriminating in their use (Miller, 1956; Shugan, 1980; van den Broek, 1990). Furthermore, the very concept of instrumentality implies a link between means and ends (Young & Feigin, 1975; Zeithaml, 1988). Consumers engaged in a decision process must not only interpret instrumental information ("what is it?"), but also

assess that information based on its ability to provide desired benefits ("how specifically can it help me achieve our goals?"). This elaboration required for such an assessment will facilitate deeper encoding into memory (Anderson & Reder, 1979; Craik & Lockhart, 1972). Finally, information is more efficiently encoded when it can be "attached" to existing knowledge structures (Ehrlich & Johnson-Laird, 1982). In consumer decision settings, consumption goals themselves provide a knowledge structure to which instrumental attribute information may be attached via elaboration. Specifically, consumption goals may be mentally represented as a series of means-end links between information, and "new" knowledge may attach to nodes within the knowledge structure. Combining the arguments above, instrumental information is more likely to be encoded into memory.

Attribute Valence

A second well-examined influence on the processing of information in consumer decision settings is the affective valence of that information. A wide range of research in social and affective cognition indicates that evaluative processing is often relatively automatic, such that individuals form spontaneous, "snap" evaluations when exposed to new stimuli (Bargh, Chaiken, Raymond, & Hymes, 1996; Zajonc, 1980). Applied to the earlier example current setting, consumers exposed to a given attribute level for a given alternative should be able to process whether that level is "good" or "bad" relative to an internal reference or standard, with minimal processing effort (Kardes, 1988; Lerner & Keltner, 2000). Most consumers would agree that 60mpg is "good" fuel economy, for example, while upholstery would be classified as "bad" if it is damaged or dirty.

Importantly, however, a wide variety of interdisciplinary evidence suggests that negative and positive information are processed in systematically different ways, such that relatively more resources are directed towards negative information. Moreover, it is commonly observed that negative information tends to be recalled more accurately (and confidently) than positive information (Carlston, 1980). In the study of judgment and decision making, an overarching and broadly-supported principle is that of generalized negativity bias–i.e., the tendency for negative vs. positive information to have disproportionate influence (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Fiske, 1980; Rozin & Royzman, 2001). Scholars in the field have studied a wide range of antecedents and consequences to this negativity bias, including attention and elaboration. In social cognition, substantial empirical evidence supports the principle of "automatic vigilance," which argues that negative or threatening information will be recognized more quickly and receive greater attention than positive information, in anticipation or prevention of undesirable outcomes (Pratto & John, 1991). In consumer settings, negatively-valenced product information is more likely to be noticed and encoded, considered more diagnostic for decision making, weighted more heavily during choice, and transmitted more often via word-of-mouth (Basuroy, Chatterjee, & Ravid, 2003; Berlyne, 1954; Chen & Lurie, 2013; Feldman & Lynch, 1988; Herr, Kardes, & Kim, 1991).

Relevance and Valence: A Synergistic Model

My fundamental assertion is that although instrumentality and valence are important factors in determining whether product attribute information will be encoded

and remembered by consumers engaged in a decision process, considering instrumentality or valence in isolation gives an incomplete picture of the process. Surprisingly, there is a dearth of research examining the *joint* effects of these factors on consumer memory. Building on existing theories of top-down processing and attenuation, I propose a compounding effect of elaboration in which instrumentality and valence jointly influence the encoding of attribute information.

My proposed process begins with the assumption that a consumer has at least moderate knowledge of the product category and his/her consumption goals pertaining to the decision; such knowledge is necessary to make assessments of instrumentality and assign affective valence. During the course of the decision process, he/she is successively exposed to attribute information for each product alternative. In keeping with the arguments above, my model predicts that this information will be evaluated based on its instrumentality to consumption goals as well as its valence, but also that the two factors will influence elaboration in distinct yet interrelated ways. My first proposal is that the instrumentality of information serves as a weighting mechanism that influences elaboration directly. Upon exposure to an item of attribute information, consumers assess its instrumentality on a continuum ("not at all instrumental to our goals"… "very instrumental to our goals"); such assessment occurs with varying degrees of automaticity, depending on the consumer's familiarity with the attribute and the number of goals to which it is perceived as instrumental. Greater weight (of processing resources) is associated with those attributes perceived to be instrumental in achieving one or more consumption goals. The end result is increased elaboration and greater likelihood of successful encoding. Continuing with the automobile example, a consumer who has a

consumption goal related to saving money on fuel would assign high instrumentality to fuel economy, and elaboration and encoding would be very likely for "miles-per-gallon" attribute information.

My second proposal is that for high-instrumentality attribute information, elaboration will be *magnified* when the valence of that information is negative rather than positive. I predicate my argument on prior evidence that processing of affectively-valenced stimuli involves distinct cognitive mechanisms, such that negative stimuli are processed in a more systematic and integrated manner. For example, research has shown that judgments of disliking involve a more deliberative and controlled thought process than judgments of liking (Herr & Page, 2004). Another pertinent line of research has demonstrated that top-down (vs. bottom-up) cognitive processes control how attention is directed toward negative information (Erber & Tesser, 1992; Erthal et al., 2005; Van Dillen & Koole, 2009). I argue that because goal-directed thought is inherently a top-down process, the increase in elaboration allocated to information that is deemed highly-instrumental to consumption goals will be magnified when that information is also negative. In the extreme, recognition that a piece of information is both highly-instrumental ("this attribute relates strongly to my consumption goals…") and highly negative ("this product is very bad on this attribute…") will lead to a strong increase in the weight assigned to that information ("this very bad attribute will prevent me from achieving my goal…"). The result is substantially greater elaboration and encoding. Although instrumentality will also enhance the elaboration of positively-valenced info, the increase will be less substantial than that observed for negative valence.

On the other hand, it is likely that low-instrumentality attributes will receive little to no elaboration, regardless of their valence. Because these attributes are ineffective in providing the benefits the consumer seeks, directing cognitive resources toward them would be of little value. Memory should thus be worse for attributes that are not instrumental to the consumer's goals (Huffman & Houston, 1993). Additionally, whereas elaboration will be compounded for high-instrumentality attributes when they are negative, this effect should not persist as instrumentality diminishes. Prior research has demonstrated superior memory for negative, threatening faces, but not for faces of non-threatening people who have merely experienced a negative event (Kinzler & Shutts, 2008). Further, there is evidence to suggest that people react quickly to dampen and minimize their reaction to negative stimuli (Taylor, 1991); this should especially be true when the negative stimuli pose no threat to the decision maker or the attainment of his/her goals. In effect, negative information that does not directly influence outcomes is bad or unpleasant—yet benign; the consumer has no reason to elaborate on the unpleasant stimuli, but in fact should be motivated to avoid this information. As a result, these attributes will be *actively ignored* by the decision maker (Tipper, 1985; Tipper, Weaver, & Houghton, 1994). Active ignoring involves the intentional, volitional redirection of attention and elaboration away from useless information. In the context of consumer decisions, once an attribute has been assessed as both negative and not instrumental for goal attainment, it should be relegated to the periphery of the consumer's attention (more so than positive, low-instrumentality information), without being encoded for subsequent recall. As a result, memory for negative information should be no better (or even worse) than positive information when the attribute is less-instrumental to

consumption goals. Importantly, I do not claim that low-instrumentality information will be not be processed at all. Even those attributes that are ultimately ignored will initially receive some level of semantic processing (Tipper & Driver, 1988), so that instrumentality and valence can be determined. In fact, even completely non-instrumental information may still receive elaboration (e.g., if it is novel, surprising, or extreme); our logic here is consistent with Treisman (1964) and similar models of attenuation.

Memory is a useful and accurate proxy for elaboration during initial exposure (e.g., Anderson and Reder (1979)). In the experimental studies that follow, I utilize subsequent recall of attribute information to reflect elaboration patterns. Combining the preceding ideas, my synergistic model yields the following predictions:

H1a: The beneficial effect of negative valence on memory for attribute information will depend upon its instrumentality to consumption goals.

H1b: Among high-instrumentality attributes, memory will be more accurate for information that is negatively valenced.

H1c: Among low-instrumentality attributes, memory for positively-valenced information will be no less accurate than memory for negatively-valenced information.

Overview of Studies

Below, I present four experimental studies investigating these hypotheses. Studies 1 and 2 examine my primary hypothesis that the memorial advantage of negative over positive attributes depends on the instrumentality of information encountered on those attributes. Study 3 explores an alternative explanation: the memory effects are not due to elaboration, but the result of differential attention (measured by differences in viewing

time for the attributes). Finally, in Study 4 I directly manipulate elaboration—the proposed mechanism—to examine changes in the resulting memory patterns.

Study 1: Memory for Automobile Attributes

The purpose of Study 1 was to explore whether goal activation and valence interact to influence memory for product attributes. In a completely within-subjects design, subjects provided their consumption goals for choosing an automobile. Afterwards, they were exposed to product attribute information for a set of four options, then completed a test assessing their memory for that information. Based on H1a-c, I expected not only that memory would be more accurate for negative information, but only among goal-relevant attributes.

Method

Participants

Sixty-one US residents participated on Mechanical Turk in exchange for cash payment.

Design and Procedure

The cover story asked participants to assume that they were interested in acquiring an automobile, and told that they would need to choose among various alternatives. First, participants examined a pre-determined list of 12 possible goals for selecting an automobile as shown in figure 2.1 (e.g., "…is easy to repair and maintain"). Participants were told to select from the list those goals that they deemed personally

relevant; all participants were required to identify at least one relevant goal, and they were allowed to select a maximum of 12 goals.

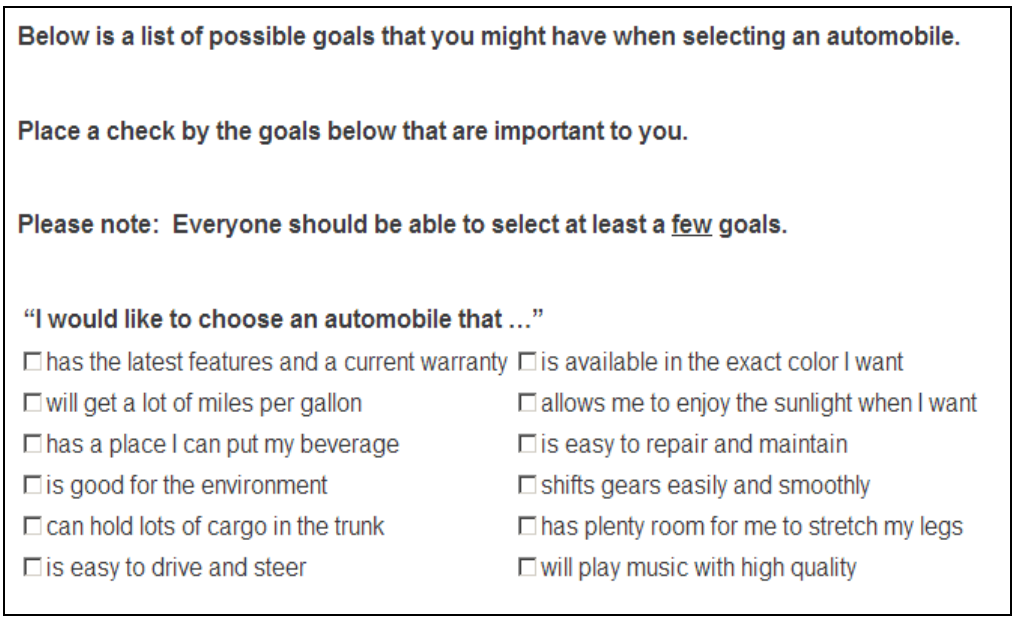

Figure 2.1: List of Possible Goals for Selecting an Automobile (Study 1)

Next, participants viewed information about four different automobiles (A, B, C, and D), randomly presented on a separate screen for 45 seconds. An example automobile stimulus is shown in figure 2.2. The automobiles were described along 12 attributes, each of which was directly related to a goal on the initial list. For example, the attribute "maintenance" corresponded with the goal "is easy to repair and maintain." The attribute profiles were adapted from stimuli used previously by Dijksterhuis and colleagues (2006). Attributes were listed in random order for each participant (but held consistent across automobiles). All attribute information presented was either positive or negative in valence (i.e., neutral attribute levels were presented). For each automobile, positive and

negative attributes were approximately balanced (5-7 of each). After viewing the descriptions, participants were asked to choose the automobile that they thought was "best."

Automobile "B"

Age	New
Mileage	Poor
Cup Holders	No
Enviro-Friendly	Good
Trunk	Small
Handling	Poor
Colors	Many
Sunroof	No
Maintenance	Good
Transmission	Good
Legroom	Poor
Sound System	Poor

Figure 2.2: Example Automobile Stimulus (Study 1)

After making their choice, participants completed a multiple-choice memory test assessing their recall of the information presented earlier. The test included one question for every attribute of every automobile (i.e., 48 questions total). With two exceptions[1], all questions offered three response options that described each attribute as positive, negative, or neutral. An example memory question is shown in figure 2.3. Following the memory test, participants were thanked and the study ended.

[1] Questions for two attributes, sunroof and cup holder, offered two response options: "does have…" or "does not have..."

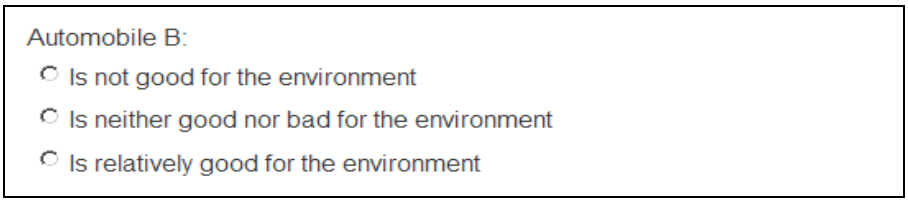

Figure 2.3: Example Memory Question (Study 1)

Dependent Measure

Prior to analysis, each of the twelve attributes was coded as high-instrumentality or low-instrumentality for each participant, based on whether the goal was selected by the participant in the first part of the study. For example, if a participant checked the box next to the goal "…is easy to repair and maintain," then the attribute "maintenance" would be coded as high-instrumentality; otherwise, the attribute would be coded as low-instrumentality. Thus, the design included valence and instrumentality as two crossed, within-subjects factors, and each of the 48 items of attribute information could be classified into one of four within-subjects cells (positive/high-instrumentality, negative/low-instrumentality, etc.)[2]. The dependent measure was the percentage of recall questions answered correctly (see below).

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[2] Because participants self-selected their goals, cell sizes for high-instrumentality and low-instrumentality were often unbalanced. Study 2 addresses this potential concern.

Results

Participants checked an average of 5.7 goals on the list. The most-commonly-selected goals included "…will get a lot of miles per gallon" (chosen by 87% of participants) and "…is easy to repair and maintain" (chosen by 79%). The least-commonly-selected goals were "…allows me to enjoy the sunlight when I want" (chosen by 13%) and "…has a place I can put my beverage" (chosen by 30%). At the choice stage, 72% of participants selected Automobile D; further examination revealed that this was the only option offering positive values on attributes relevant to the three most-selected goals (mileage, maintenance, and handling).

Analysis of aggregate responses to the memory questions showed that participants selected negative, positive, and neutral answers were selected 40% of the time, 36% of the time, and 24% of the time, respectively. Memory scores were calculated as the percentage of attribute values correctly recalled. Prior to analysis, memory scores were adjusted to account for each participant's tendency to 'guess' in a positive or negative direction. First, a participant's guessing tendency was calculated as follows: *tendency to guess positive* = (total positive responses ÷ 48); *tendency to guess negative* = (total negative responses ÷ 48). Next, the adjustment was performed by subtracting the guessing tendency for each valence category from the memory score for each within-subject cell. For example, the adjusted score for the positive/high-instrumentality cell of a specific participant would be calculated as follows:

$$adjusted\ proportion\ correct_{\text{positive/high-instrumentality}} =$$

$$proportion\ correct_{\text{positive/high-instrumentality}} - tendency\ to\ guess\ positive.$$

Therefore, an adjusted score greater than 0 reflects an accuracy rate above that which could be achieved by guessing. The theoretical range for adjusted scores was (-0.5,

0.5). Negative scores were converted to 0 prior to arcsin transformation (see below). Raw and adjusted scores are shown in table 2.1.

Table 2.1: Memory Scores (Study 1)

	Raw Score	Adjusted Score
Positive/High-Instrumentality	.46	.10
Negative/High-Instrumentality	.56	.20
Positive/Low-Instrumentality	.43	.07
Negative/ Low-Instrumentality	.43	.07

In the main analysis, the adjusted percentages were converted via arcsin transformation and submitted to repeated-measures ANOVA with valence and instrumentality entered as fixed factors. Consistent with prior research, participants remembered high-instrumentality information significantly more accurately than low-instrumentality information (M_{High}=.15 M_{Low}=.07, $F(1,59)=10.04$, $p<.01$). In addition (and also consistent with prior research), results revealed a significant main effect of valence: subjects remembered negative information significantly more accurately than positive information ($M_{Negative}$=.13, $M_{Positive}$=.08, $F(1,59)=9.43$, $p<.01$). Most importantly, these effects were qualified by a significant instrumentality*valence interaction ($F(1,59)=7.13$, $p<.02$). Consistent with my framework and supporting H1a-b, pairwise comparisons revealed that memory for negative information was superior to that for positive information only for high-instrumentality attributes, (M_{NegHi}=.20, M_{PosHi}=.10, $F(1,59)=13.16$, $p<.01$). For low-instrumentality attributes, no valence effect was observed (M_{NegLow}=.07, M_{PosLow}=.07, $F(1,59)=.07$, $p>.7$), supporting H1c. Results are depicted in figure 2.4.

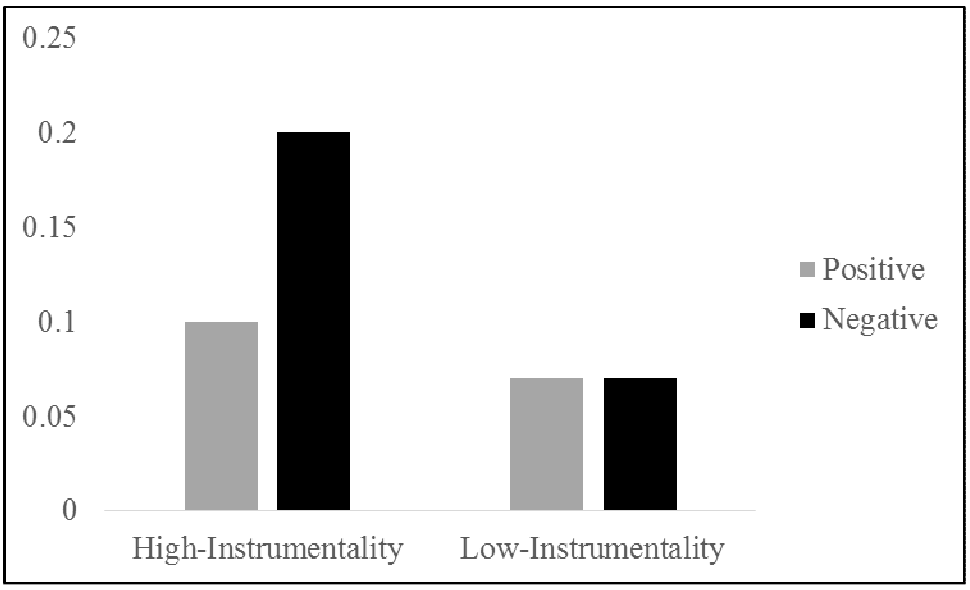


Figure 2.4: Memory Scores: Adjusted Percent Correct (Study 1)

Discussion

Results of Study 1 provide support for my conceptual model, in which consumer encoding of attribute information depends jointly on its perceived instrumentality to active consumption goals and on the valence of that information. Stated in terms of the model, study participants elaborated more heavily on negative attribute information, but only among high-instrumentality attributes. Memory scores were significantly higher for high-instrumentality than low-instrumentality attributes, and within high-instrumentality attributes, scores were significantly higher for negative than positive information. There was also evidence of active ignoring, as memory for positive and negative information was not significantly different among low-instrumentality attributes.

However, a potential weakness in the design of Study 1 may hinder interpretation of these results. As described earlier, high-instrumentality attributes were identified by asking participants to select their consumption goals for the decision. There was

considerable variation among participants in the number of goals identified (*SD*=2.46), and it is plausible that this self-selection introduced systematic biases. Study 2 was an attempt to replicate the effects revealed in Study 1 while also addressing various weaknesses and collecting new measures.

Study 2: Indirect Goal Identification

Although the choice context was the same (selecting an automobile), several changes and improvements were made to the design of Study 2. The second study utilized an indirect measure to identify consumption goals; whereas participants in Study 1 had selected their consumption goals from a list, participants in Study 2 were asked to assign attribute-importance ratings (see below). I deemed this method suitable for a number of reasons. First, the act of contemplating each attribute and assigning importance requires implicit consideration of *why* the attribute matters (i.e., goals served by that attribute). Methodologically, this approach allows for continuous measurement of goals instrumentality than the binary (check vs. not checked) approach used in Study 1. As in Study 1, I expected the joint influence of goal-instrumentality and valence on memory, whereby a negativity bias was stronger among high-instrumentality attributes but absent among low-instrumentality attributes.

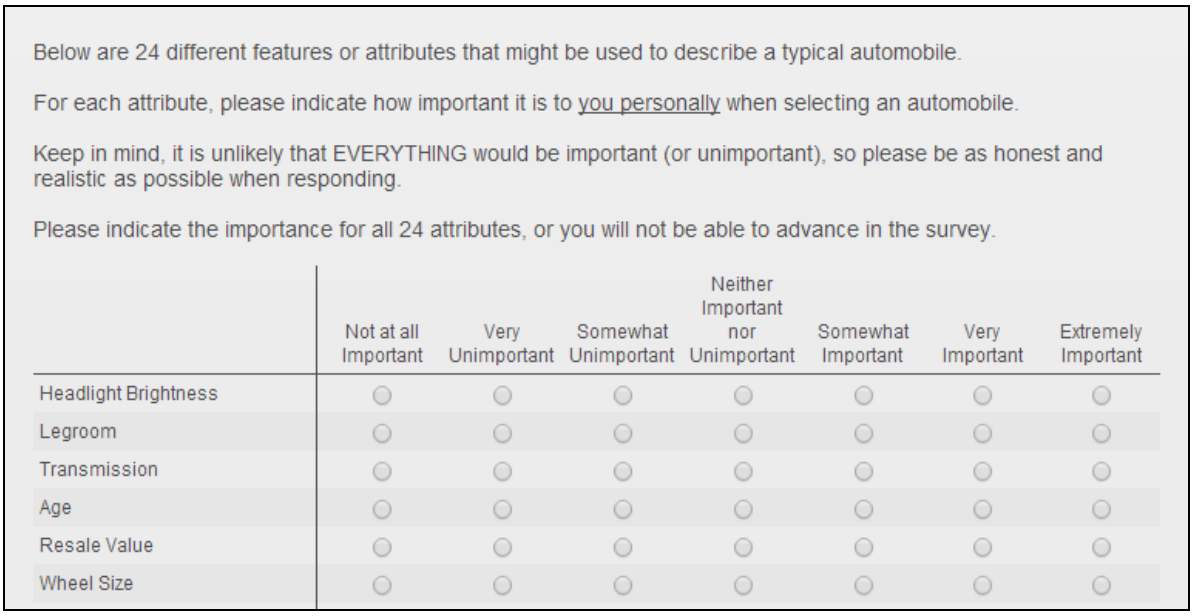
Method

Participants

One-hundred-fifty-four US residents participated on Mechanical Turk in exchange for payment.

Design and Procedure

As before, the cover story asked participants to assume that they were interested in acquiring an automobile, and they would soon choose the one they thought was "best". Participants were then presented with a list of 24 different automobile attributes, as shown figure 2.5. Participants were asked to rate the personal importance of each attribute on a Likert-type scale (1 = Not at all Important…7 = Extremely Important). The importance of each attribute relates directly to the consumption goals it can satisfy; for example, a participant who rated legroom as very important would likely have the goal "to extend my legs and sit comfortably."



Below are 24 different features or attributes that might be used to describe a typical automobile.

For each attribute, please indicate how important it is to you personally when selecting an automobile.

Keep in mind, it is unlikely that EVERYTHING would be important (or unimportant), so please be as honest and realistic as possible when responding.

Please indicate the importance for all 24 attributes, or you will not be able to advance in the survey.

	Not at all Important	Very Unimportant	Somewhat Unimportant	Neither Important nor Unimportant	Somewhat Important	Very Important	Extremely Important
Headlight Brightness	○	○	○	○	○	○	○
Legroom	○	○	○	○	○	○	○
Transmission	○	○	○	○	○	○	○
Age	○	○	○	○	○	○	○
Resale Value	○	○	○	○	○	○	○
Wheel Size	○	○	○	○	○	○	○

Figure 2.5: Attribute-Importance Assessment (Studies 2-4)[3]

Next, participants viewed attribute information for four different automobiles on different screens, for 45 seconds per automobile. Unlike Study 1, the automobiles were assigned fictitious names identical to those used in prior research (Dijksterhuis, et al., 2006),

Also unlike Study 1, the attribute profiles were participant-specific. Each automobile represented a unique combination of eight attributes, based on the participant's attribute importance ratings from the previous step. The first four attributes for each automobile consisted of those rated as the most-instrumental; the last four consisted of those rated least-instrumental. Figure 2.6 presents an example profile in

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[3] Attributes included: headlight brightness, legroom, transmission, age, resale value, wheel size, handling, rear defroster, GPS accuracy, upholstery, alarm system, MPG rating, maintenance, color selection, sound system, number of storage compartments, cruise control, number of cup holders, engine size, suspension, number of airbags, window tinting, iPod compatibility, and trunk size.

which the participant rated maintenance, transmission, handling and engine size as the most important, and headlight brightness, iPod compatibility, GPS accuracy, and rear defroster as the least important attributes. In another change from the prior study, information for each attribute was described directly in terms of valence: "very bad," "bad," "good," or "very good." Valence was balanced so that each automobile included four positive attributes (three "good" and one "very good") and four negative attributes (three "bad" and one "very bad"). In addition, valence was balanced with instrumentality so that the most-instrumental attributes provided an even mixture of positive and negative values, and the same was true for the least-instrumental attributes.

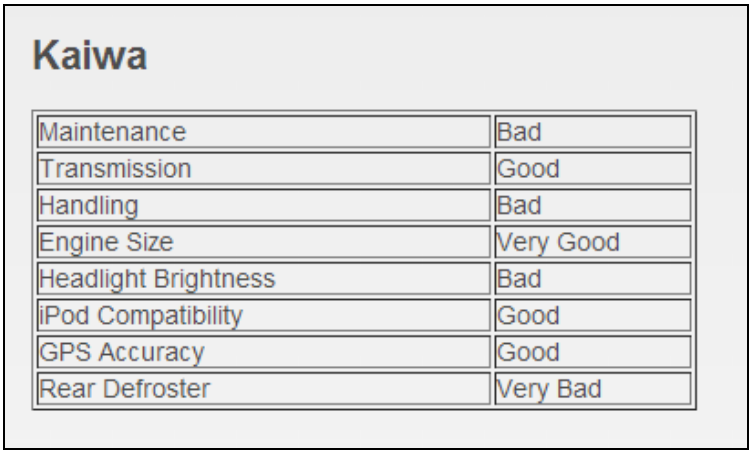

Figure 2.6: Example Automobile Stimulus (Study 2)

After each automobile was displayed, the participant was asked to correctly identify the name of the automobile he/she had just seen. This measure was included to ensure that participants were paying attention to the automobile names. After viewing all descriptions, participants were asked to choose the automobile that was "best."

Participants then completed a multiple-choice memory test similar to that of Study 1. The test included one question for every attribute of every automobile (32 questions total). Each question offered four response options: "very bad," "bad," "good," and "very good." An example question is shown in figure 2.7.

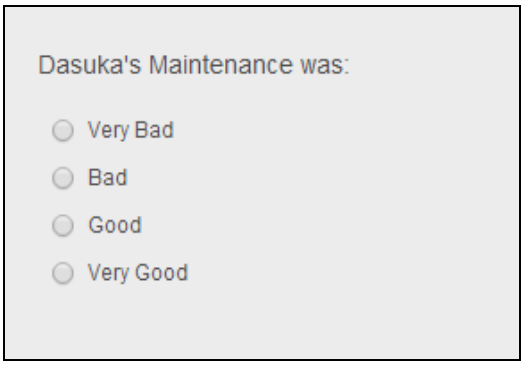

Figure 2.7: Example Memory Question (Studies 2-4)

After finishing the memory test, participants completed a series of introspection questions. First, participants were asked to rate their difficulty in selecting an automobile (0=Very Easy…100=Very Difficult). Next, they completed an open-ended essay question asking them to describe their decision process. Finally, they estimated the number of positive and negative attributes that they had viewed for each automobile. Afterwards, participants were thanked and the study ended.

Dependent Measure

Prior to analysis, each of the eight attributes presented to each participant was coded as high-instrumentality or low-instrumentality, based on the importance they were assigned by participants. The four most-important attributes were coded as high-

instrumentality, and the four least-important were coded as low-instrumentality. Thus, the design included valence and instrumentality as two crossed, within-subjects factors, and the 32 items of attribute information viewed by each participant could be classified into one of four within-subjects cells (positive/high-instrumentality, negative/low-instrumentality, etc.). As before, the dependent measure was the percentage of recall questions answered correctly (see below).

Results

The attributes assigned greatest average importance were MPG rating (rated 6.21) and maintenance (5.88). The attributes assigned lowest average importance were number of cup holders (3.09) and iPod compatibility (3.29). Choice shares for the four cars ranged from 17.5% to 31.8%.

Six participants failed the name-recognition question for the automobiles. Because no participant failed more than one name-recognition question, responses from all participants were included in the analyses. On average, participants rated the difficulty of their choice task as 63.25 (out of 100). Participants remembered seeing an average of 3.9 positive attributes and 4.1 negative attributes for each automobile.

Memory scores were calculated based on valence alone; for example, a response of either “very bad” or “bad” was scored as an accurate response when the item was negatively valenced. As in Study 1, memory scores were adjusted for guessing tendencies. Raw and adjusted memory scores are shown in table 2.2.

Table 2.2: Memory Scores (Study 2)

	Raw Score	Adjusted Score
Positive/High-Instrumentality	.63	.14
Negative/ High-Instrumentality	.69	.19
Positive/Low-Instrumentality	.61	.12
Negative/ Low-Instrumentality	.57	.07

Given that the design ensured an equal number of items in each cell, the adjusted memory scores were not converted via arcsin transformation for Study 2 (or any remaining studies). As before, the theoretical range for adjusted scores was (-0.5, 0.5). Scores were submitted to a repeated-measure ANOVA. Consistent with prior research and Study 1, results revealed a significant main effect of instrumentality: subjects remembered high-instrumentality information significantly more accurately than low-instrumentality information (M_{High}=.16, M_{Low}=.09, F(1,153)=25.78, p<.01). However, there was no significant main effect of valence ($M_{Negative}$=.13, $M_{Positive}$=.13, F(1,153)<.1, p>.9). Importantly, however, these effects were qualified by a significant valence*instrumentality interaction (F(1,153)=14.74, p<.01). Consistent with my framework and supporting H1a-b, pairwise comparisons revealed that among high-instrumentality attributes, memory for negative information was superior to that for positive information (M_{NegHi}=.19, M_{PosHi}=.14, F(1,153)=14.08, p<.01). Among low-instrumentality attributes, however, the opposite was true (M_{NegLow}=.07, M_{PosLow}=.11, F(1,153)=14.1, p<.01), supporting H1c. Results are depicted in figure 2.8.

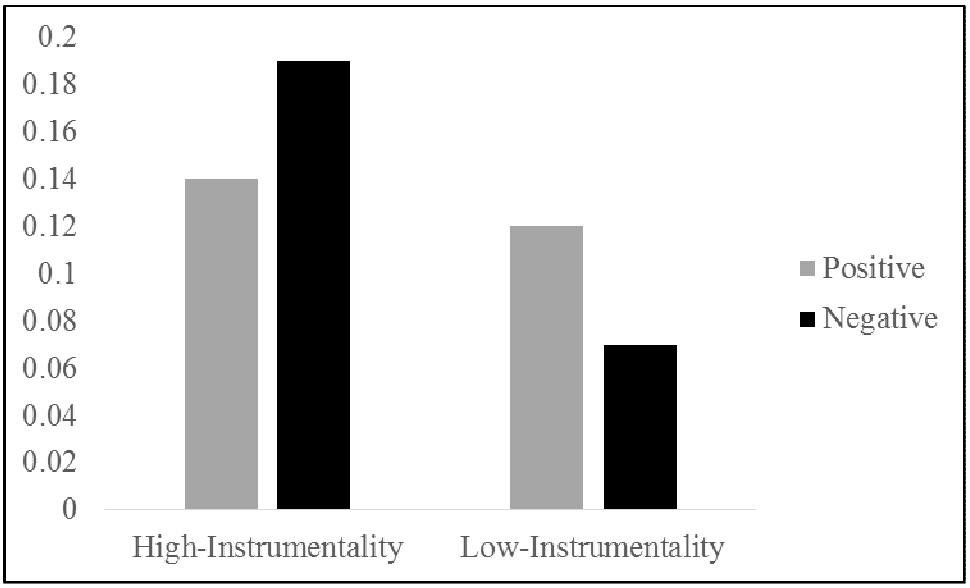

Figure 2.8: Memory Scores: Adjusted Percent Correct (Study 2)

Discussion

Results of Study 2 provide additional support for my theoretical model, while improving on the design of Study 1. As before, results suggested that encoding and retrieval of choice-relevant information depends on both the valence of the information and its instrumentality to consumption goals. In accordance with my theory, there appears to be a bias toward negative information, but only among high-instrumentality attributes. On the other hand, a positivity bias seems to be present among low-instrumentality attributes; this could be caused by counter-arguing of negative information.

My theory suggests that the memory patterns discovered in Studies 1 and 2 were a result of differential elaboration due to the valence and instrumentality of attribute information. Study 3 tested an alternative explanation based on the attention: the patterns

in encoding may not be due to elaboration, but instead may simply be due to longer viewing time of highly-instrumental, negative attributes.

Study 3: Attention

It is possible that the encoding effects revealed in Studies 1 and 2 were not the result of greater elaboration for negative information, especially among highly-instrumental attributes. Instead, these memory patterns could simply be the result of greater attention (e.g., "a bad engine…interesting") rather than elaboration (e.g., "the bad fuel economy will prevent me from achieving my goal to save money on gas"). In Study 3, therefore, I measured attribute viewing time, which is a common proxy for attention (Celsi & Olson, 1988). As in Studies 1 and 2, the choice context involved selecting an automobile based on a sequence of attribute information. However, the presentation of attribute profiles was altered from that of the previous studies, and information about individual attributes was presented one attribute at a time. Therefore, subjects were permitted to view automobile attributes at their own desired pace, and viewing time was measured for each attribute. As in the prior studies, I expected a negativity bias to be revealed in participants' memory for high-instrumentality attributes, even after accounting for viewing time.

Method

Participants

One-hundred-fifty-US residents participated on Mechanical Turk in exchange for payment.

Design and Procedure

As in prior studies, the cover story asked participants to assume that they were interested in acquiring an automobile. After reading the story, participants encountered a screen asking them to rate the importance of 24 different automobile attributes on a Likert-type scale (1=Not at all Important…7=Extremely Important).

Next, participants viewed information about three different automobiles. Each attribute was presented on a different screen, and participants were was allowed to proceed at their own pace. The time spent by each participant viewing each attribute was recorded. Three automobiles from Study 2—Dasuka, Nabusi, and Hatsdun—were used as stimuli, and 12 attributes for each automobile were randomly presented. As in Study 2, each automobile represented a unique combination of attributes based on the individual participant's attribute-importance ratings from the previous step. Unlike Study 2, three levels of instrumentality were presented: high, medium, and low. (Medium-instrumentality consisted of the four attributes that the participant ranked in the middle, in the initial rating screen). As before, information for each attribute was described directly in terms of valence: very bad, bad, good, or very good. Valence was once again balanced so that each automobile provided six positive attributes (five "good" and one "very good") and six negative attributes (five "bad" and one "very bad"). Valence was also

balanced with importance, so that high-, medium-, and low-importance attributes contained an even mixture of positive and negative values.

As in Study 2, after each automobile was displayed, the participant was asked to correctly identify the name of the automobile he/she had just seen. Additionally, participants were asked to provide a 1-sentence description of the automobile. After viewing all descriptions, participants were asked to choose the automobile that was "best."

As before, participants then completed a multiple-choice memory test. The memory test included one question for every attribute of every automobile (36 questions total). Each question offered four possible responses: very bad, bad, good, and very good.

Study 3 included the same introspection questions used in Study 2, administered after the memory test. First, participants were asked to rate the difficulty of selecting an automobile (0=Very Easy…100=Very Difficult). Next, participants described their decision process by completing an open-ended essay question. Then they estimated the number of positive and negative attributes that they had viewed for each automobile. Finally, participants were thanked and the study ended.

Results

As before, the dependent measure was the percentage of recall questions answered correctly. Viewing time for each attribute was measured in seconds. The attributes assigned the greatest average importance were MPG rating (rated 6.24) and maintenance (5.99). Attributes assigned the lowest average importance were window

tinting (3.43) and iPod compatibility (3.57). Choice shares for the four cars ranged from 27.3% to 44.7%.

Four participants failed the name-recognition for the automobiles. Because no participant failed more than one name-recognition question, responses from all participants were included in the analyses. On average, participated the difficulty of the choice task as 65.27 (out of 100).Participants remembered seeing an average of 5.7 positive attributes and 6.3 negative attributes for each automobile.

As in Study 2, memory scores were calculated based on valence alone. Memory scores were again adjusted for guessing tendencies; raw and adjusted memory scores are shown in table 2.3.

Table 2.3: Memory Scores (Study 3)

	Raw Score	Adjusted Score
Positive/High-Instrumentality	.63	.15
Negative/High- Instrumentality	.70	.19
Positive/Medium- Instrumentality	.62	.13
Negative/Medium- Instrumentality	.64	.13
Positive/Low- Instrumentality	.57	.08
Negative/Low- Instrumentality	.56	.05

In the main analysis, the adjusted memory scores were submitted to a repeated-measure ANOVA. Consistent with Studies 1 and 2, results revealed a significant main effect of instrumentality ($F(2,148)=22.02$, $p<.01$): subjects remembered high-instrumentality attributes significantly more accurately than medium-instrumentality attributes ($M_{High}=.17$, $M_{Medium}=.13$, $p<.05$), and medium-instrumentality attributes

significantly more accurately than low-instrumentality attributes (M_{Medium}=.13, M_{Low}=.07, p<.01). The main effect of information valence was negligible ($M_{Negative}$=.12, $M_{Positive}$=.12, $F(1,149)<1$, p>.99). Importantly, however, these effects were qualified by a significant valence*instrumentality interaction ($F(2,148)=4.06$, p<.02). Consistent with my framework and supporting H1a-b, pairwise comparisons revealed a negativity bias among high-instrumentality attributes (M_{NegHi}=.19, M_{PosHi}=.15, $F(1,149)=7.69$, p<.01). Among medium-instrumentality attributes, memory was not significantly different for positive and negative information (M_{NegMed}=.13, M_{PosMed}=.13, $F(1,149)=.39$, p>.5). Among low-instrumentality attributes, however, memory was significantly better for positive than for negative information (M_{NegLow}=.05, M_{PosLow}=.08, $F(1,149)=4.72$, p=.03), supporting H1c. Memory results are depicted in figure 2.9.

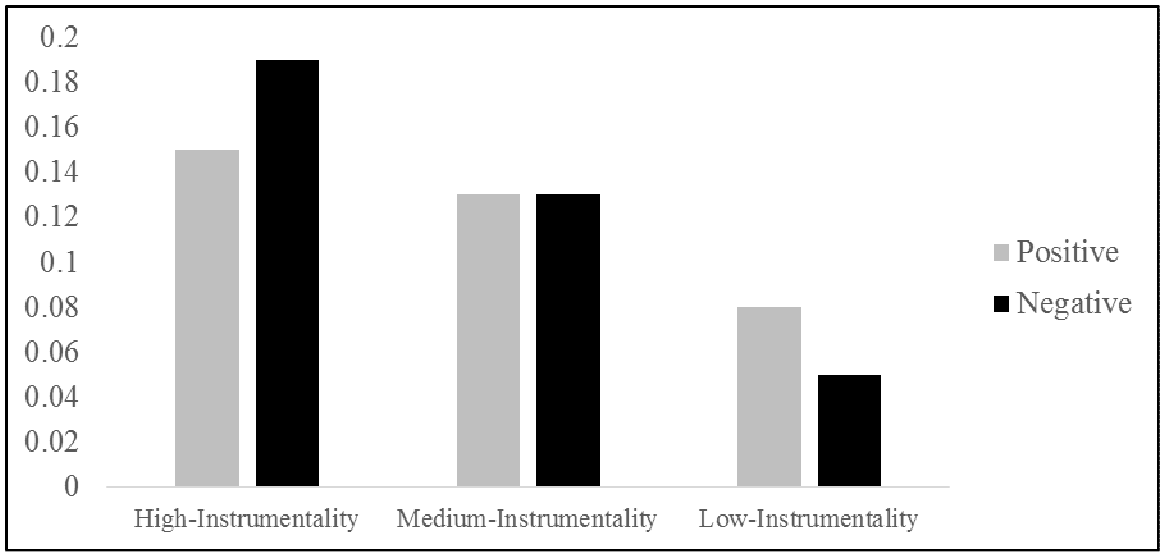

Figure 2.9: Memory Scores: Adjusted Percent Correct (Study 3)

Next, attention was examined as a potential explanation for the pattern of results. Viewing time results are shown in table 2.4 and figure 2.10. Analysis of viewing times via ANOVA revealed only a main effect of instrumentality, such that participants spent significantly more time viewing high-instrumentality attributes than medium- or low-instrumentality attributes (M_{High}=2.86, M_{Medium}=1.77, M_{Low}=1.86, $F(2,147)=29.43$, $p<.01$). Analyses revealed no significant main effect of valence ($F(1,148)=1.71$, $p>.19$), nor did they reveal a significant valence*instrumentality interaction ($F(1,148)=1.78$, $p>.17$).

Table 2.4: Viewing Time [Seconds] (Study 3)

	Positive	**Negative**
High-Instrumentality	2.88	2.83
Medium-Instrumentality	1.58	1.96
Low-Instrumentality	1.75	1.97

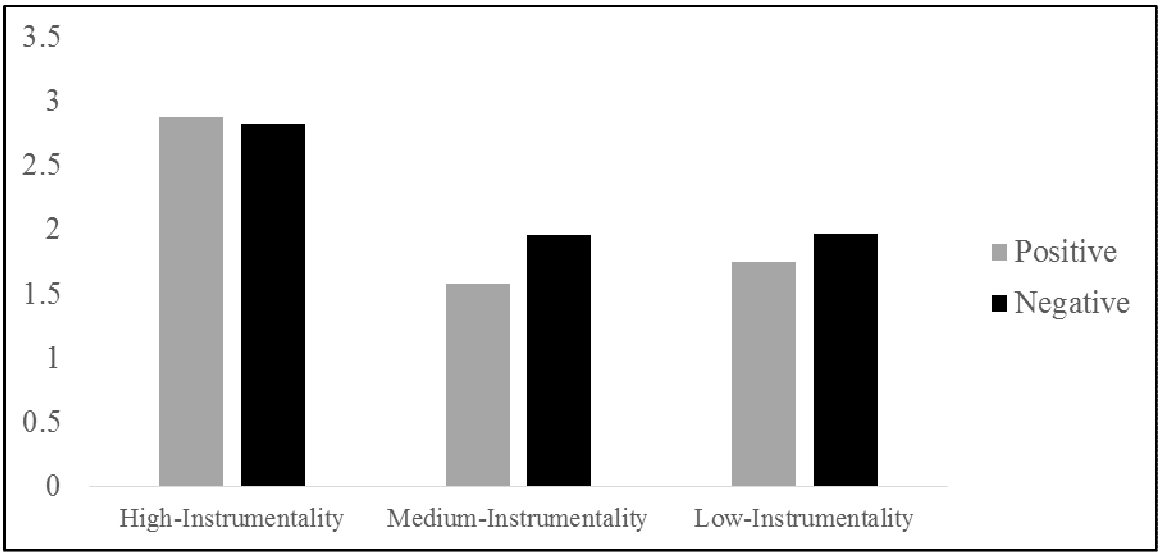

Figure 2.10: Viewing Time [Seconds] (Study 3)

Discussion

The results of Study 3 provide further support for my theory that consumers elaborate more on negative information, but only when it is highly-relevant to consumption goals. Moreover, results of the viewing-time analyses serve as evidence against the alternative explanation that attention—not elaboration—was responsible for the pattern of results obtained. Rather, the results provide further evidence that the pattern was driven by greater elaboration for negative attributes and their (in)ability to provide desired consumption benefits. Study 4 was designed to directly test elaboration as an underlying mechanism for the memory patterns observed in the previous studies.

Study 4: Induced Elaboration

As in the prior studies, participants rated the importance of various automobile attributes and were later given a memory recall test. However, Study 4 included an additional, induced-elaboration condition, in which participants were asked to explicitly contemplate and describe how each attribute would affect their decision. According to my framework, a negativity bias exists in encoding of high-instrumentality attributes, because the consumer will mentally elaborate on the "most important" goals that the negative attributes cannot achieve. Thus, inducing elaboration should improve memory for medium- and low instrumentality attributes; when elaboration is not induced (control), the pattern from the previous studies should still be observed.

Method

Participants

Two-hundred-thirty-two US residents participated on Mechanical Turk in exchange for payment.

Design and Procedure

The design was similar to that of Study 2, with two major exceptions. First, goal instrumentality was manipulated at three levels: high, medium, and low (as in Study 3). Second, induced-elaboration was added as a new, between-subjects manipulation. The new manipulation occurred after the attribute-weighting task, as participants were viewing attribute information for each automobile.

For participants in the control condition, the screen was nearly identical to that in Study 2 (except there were 12 attributes, not 8). For participants in the induced-elaboration condition, a text-entry box was located next to each attribute. Participants were told, "Next to each automobile attribute, please type a sentence about how it would impact you and your evaluation of the automobile."

Results

The attributes assigned the greatest average importance were MPG rating (rated 6.31) and maintenance (6.03). Attributes assigned the lowest average importance were wheel size (3.78) and number of cup holders (3.57). Choice shares for the four cars ranged from 28.9% to 36.2%.

Three participants failed the attention-check question for the automobiles. Because no participant failed more than one name-recognition question, responses from all participants were included in the analyses. On average, participants rated the difficulty of the choice task as 68.7 (out of 100). Participants remembered seeing an average of 3.8 positive attributes and 4.2 negative attributes.

Using the same method as in Studies 1 and 2, memory scores were calculated based on valence alone and were adjusted for guessing tendencies,. Raw and adjusted memory scores are shown in table 2.5.

Table 2.5: Memory Scores (Study 4)

	Control		Induced-Elaboration	
	Raw Score	**Adjusted Score**	**Raw Score**	**Adjusted Score**
Positive/High-Instrumentality	.65	.14	.66	.17
Negative/High-Instrumentality	.70	.21	.67	.17
Positive/Medium-Instrumentality	.62	.11	.61	.11
Negative/Medium-Instrumentality	.58	.09	.65	.15
Positive/Low-Instrumentality	.59	.08	.62	.12
Negative/Low-Instrumentality	.53	.04	.59	.09

The adjusted percentages were submitted to a repeated-measure ANOVA, and Results are depicted in figure 2.11. Analyses revealed a significant three-way valence*instrumentality*condition interaction ($F(2,229)=5.30$, $p<.01$). Follow-up analysis revealed that the valence*instrumentality interaction was significant for the control ($F(2,125)=8.82$, $p<.01$). For the induced-elaboration condition, however, the valence*instrumentality interaction was not significant ($F(2,103)=2.15$, $p>.12$). Subsequent analysis across conditions revealed the predicted pattern: compared to participants in the control condition, participants in the induced-elaboration condition exhibited superior recall of both negative, medium-instrumentality attributes ($M_{Control}=.09$, $M_{IndElab}=.15$, $F(1,230)=4.30$, $p<.04$) and negative, low-instrumentality attributes ($M_{Control}=.04$, $M_{IndElab}=.09$, $F(1,230)=4.32$, $p<.04$). Performance did not significantly differ across conditions for negative, high-instrumentality attributes ($M_{Control}=.21$, $M_{IndElab}=.17$, $F(1,230)=2.33$, $p>.12$).

As in prior studies, analyses revealed a significant valence*instrumentality interaction ($F(2,229)=5.73$, $p<.01$). Consistent with my framework and supporting H1a-b, pairwise comparisons revealed that among high-instrumentality attributes, memory for negative information was superior to that for positive information ($M_{NegHi}=.19$,

M_{PosHi}=.15, F(1,230)=9.14, p<.01). Memory was not significantly different for positive and negative information among medium-instrumentality attributes (M_{NegMed}=.12, M_{PosMed}=.11, F(1,230)=.22, p>.6). Among low-instrumentality attributes, however, memory for positive information was significantly better than memory for negative information (M_{NegLow}=.06, M_{PosLow}=.10, F(1,230)=9.28, p<.01), in support of H1c. Results also revealed a significant main effect of instrumentality: subjects remembered high-instrumentality attributes significantly better than medium-instrumentality attributes, high-instrumentality better than low-instrumentality, and medium-instrumentality better than low-instrumentality (M_{High}=.17, M_{Medium}=.12, M_{Low}=.08, F(2,229)=20.55, p<.01). However, there was no significant main effect of valence ($M_{Negative}$=.12, $M_{Positive}$=.12, F(1,230)<1, p>.99) or condition ($M_{Control}$=.11, $M_{IndElab}$=.13, F(1,230)=1.61, p>.2).

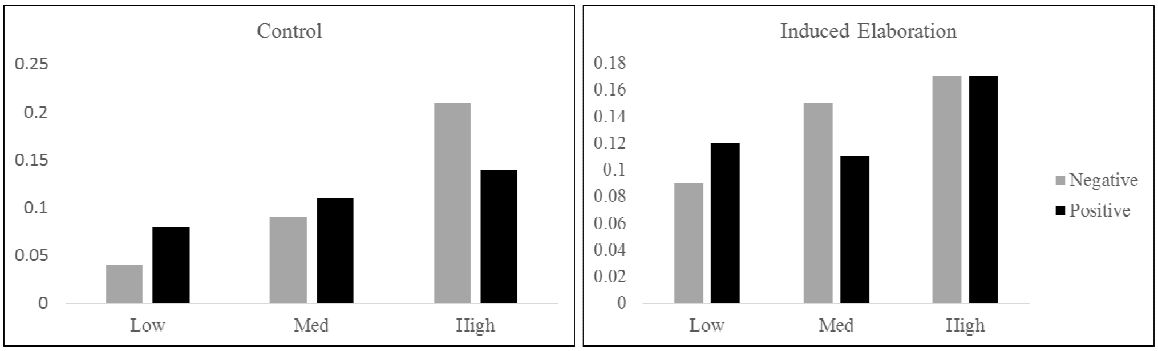

Figure 2.11: Memory Scores: Adjusted Percent Correct (Study 4)

Discussion

The results of Study 4 provide additional support for my framework in which encoding of attribute information during a decision task depends upon both the

instrumentality of information to consumption goals and its affective valence. Findings in the control condition were consistent with the three prior studies: among high-instrumentality attributes, memory was more accurate for negative than positive information, but the opposite was true among low-instrumentality attributes. Moreover, the study provided additional evidence that these memory patterns were due to differential elaboration. When participants were forced to elaborate on each product attribute, the bias toward negative information was present even among medium- and low-instrumentality attributes.

General Discussion

Supplementing prior work on consumer memory that has examined single variables in isolation, my findings suggest that encoding of information during consumer decisions depends jointly on the valence of that information and its instrumentality to consumption goals. Specifically, the memorial advantage of negative information is magnified for attributes that are goal-relevant. This primary finding was replicated across four experimental studies. Additionally, the third study helped rule out attention as an alternative explanation for the observed effects. Furthermore, findings of my fourth study provide evidence that elaboration is the underlying mechanism for these distinct memory patterns.

Theoretical Implications

My findings expand current understanding of the manner in which consumers utilize information for the purpose of forming attitudes, making decisions, and achieving their consumption goals. In particular, my theory integrates existing work that has identified distinct effects of attribute valence and goal instrumentality on memory formation and retrieval. Rather than examining valence or instrumentality in isolation, I provide a more comprehensive framework in which these factors are interdependent: elaboration and encoding of information is enhanced for negatively-valenced attributes, primarily when the attribute is also highly instrumental to consumption goals.

Certain aspects of my framework relate directly to contemporary theories of affective processing. In particular, emotional appraisal models argue that prior to forming emotional reactions to stimuli, individuals make instantaneous assessments of various stimulus properties, including instrumentality and valence (Scherer, 2013). The meaning of instrumentality and valence is considered distinctly in appraisal models, such that the intrinsic pleasantness of a stimulus determines its valence, and instrumentality concerns the ability of the stimulus to satisfy needs or goals. Beyond meaning, my theory conceptualizes the effects of instrumentality and valence as interdependent: negative valence compounds the effect of goal-instrumentality on elaboration, encoding and recall.

My work also informs broader research on the structure and organization of consumer memory. In particular, my findings build on the contemporary view that information is stored in memory as a collection of interconnected nodes (Bower, 1981), and my results can be interpreted according to the principles of spreading activation and knowledge schema (Collins & Loftus, 1975), which. Considered in these terms,

consumption goals can be viewed as pre-existing knowledge structures, and encoding of attribute information will be facilitated when that information can be readily associated with one or more of these pre-existing structures. Thus, greater elaboration activates a broader network of schema. My findings demonstrate that elaboration of goal-relevant product information is compounded when that information is negative; in terms of the network models, this suggests that exposure to negative, goal-relevant product information activates an especially large network, broadening the number of potential "connection points" to which the new information may be attached.

In contrast, the concept of "spreading inhibition" has been used to describe cognitive processes that prevent unimportant information from triggering additional schema in memory (Tipper & Driver, 1988), minimizing distractions and aiding focus. I suggest that my findings can be viewed as evidence of spreading inhibition in consumer information processing: low-instrumentality information is prevented from triggering additional schema, more so for negative than for positive attribute information.

Practical Implications

My findings offer a number of implications for marketers regarding the presentation of product information through advertising, packaging, communications, etc., as well as important implications for consumers themselves. A straightforward conclusion of my work is that it is critical for marketers to understand the *most-important* consumption goals that customers have in mind as they evaluate alternatives in the marketplace. Beyond a general understanding of "what matters" to the consumer, any opportunity to stratify or prioritize consumer goals should be seized. Understanding of

consumption goals can be enhanced through the application of formal laddering methods or a variety of other feedback mechanisms (surveys, etc.). In addition, analysis of contemporary WOM forums (social media, reviews, etc.) can be especially useful for gleaning "what matters" to customers in the category.

Beyond simply identifying consumption goals, marketers should aim to actively influence which attributes are perceived as goal-relevant. This is especially useful for those attributes on which a brand is clearly superior to competitors. Prior work suggests that even "trivial" attributes can be important for establishing differentiation (e.g., Carpenter et al. (1994). If marketers can make the trivial seem instrumental to an important goal, however, this may increase the likelihood that they will be stored in memory.

From a consumer perspective, my research offers important implications for enhancing memory-based decision making. For example, it is important to have a thorough understanding of one's own consumption goals at the time of information exposure, as doing so will improve encoding and retention of information that is most relevant to those goals. Unfortunately, prior work indicates that consumers are surprisingly poor at identifying their consumption goals, (Bond, Carlson, & Keeney, 2008). My findings indicate a steep decline in memory between attributes perceived as high- and medium-instrumentality. If a consumer somehow fails to consider medium-level goals, critical attribute information may be neglected and forgotten. To avoid negative repercussions of this failure on subsequent decisions, consumers would be well-advised to engage in formal or informal elicitation, laddering, or other goal contemplation prior to engaging in information search.

Limitations and Future Research

Across my experiments, both the product decision and memory test occurred immediately after exposure to product information. Moreover, the environment was essentially constant at encoding and retrieval, with consistent wording, presentation of attributes, etc. In real-world settings, consumers often gather information days or weeks before making their decision, information is acquired in numerous forms (advertisements, salespeople, observation, etc.), and the retrieval environment may be very different than the encoding environment. Although I expect my basic findings to replicate over longer time intervals, future research could test this directly. More generally, it would be worthwhile to test my predictions in a more natural setting (e.g., by use of field studies or consequential choices).

All four of my studies involved the same choice context, selecting an automobile. This product category offers many methodological advantages: it is realistic, has numerous and diverse attributes, is familiar to most consumers, and has been used frequently in consumer research. On the other hand, it is plausible that certain properties of the category may have influenced or limited my investigation. For example, attribute preferences for automobiles are often well-established, making it necessary to measure than manipulate goal instrumentality. To overcome this constraint, future research might explore my framework using product categories with weaker preferences. More generally, the effects shown in my studies may vary with familiarity, due to such factors as perceived risk, uncertainty, and search behavior. Prior research has documented an inverted-U relationship between product familiarity and recall of attribute information

(Johnson & Russo, 1984), such that moderate familiarity is associated with higher recall than either high or low familiarity. A similar, inverted-U pattern has been shown for information search (Ozanne, Brucks, & Grewal, 1992) and perceptions of decision risk (Moreau, Lehmann, & Markman, 2001). Therefore, it would be valuable to extend the current investigation to less-familiar products (e.g., emerging technologies). To the extent that heightened risk perceptions manifest in larger negativity bias, my theory predicts not only greater elaboration of negative information for such products, but greater magnification of the effects of goal instrumentality. Each of these variables represents a fruitful opportunity for extending the scope and implications of my research.

CHAPTER 3

ELICITATION OF CONSUMPTION GOALS AS AN ATTRIBUTE-WEIGHTING MECHANISM

Introduction

Consider the example of two consumers, both shopping in a retail environment. The product alternatives they evaluate are each described by various attributes. Although the two shoppers have similar wants and needs, similar budgets, and similar expertise in the category, they pursue the shopping decision using very different methods. The first customer has carefully spent a few minutes thinking about the benefits she wants the product to provide. The reflection process is not exhaustive: after considering pros and cons of the similar products she has owned in the past and getting feedback from friends and other sources, she thinks that she has a good idea of what matters to her. The second customer, on the other hand, has not thought much about buying the product beforehand, other than recognizing that he wants to buy one. He scans over the product attributes, some of which catch his attention more than others. Eventually, both customers make their choices and head to the cash registers. Which consumer is more likely to be satisfied with the product he/she selected?

Because the first customer spent time before the decision identifying the benefits she wanted the product to provide, we may expect her to make a better decision—and end up more satisfied—than the other consumer who proceeded directly to the choice. As I will demonstrate below, identifying one's desired benefits before making a choice is often helpful in achieving better decision outcomes. But why does this happen? Is it because we have worked harder at making the decision? Does identifying desired benefits

change our expectations about the decision, which in turn influences the outcome? Furthermore, are there times when considering desired benefits might actually lead to *worse* decision outcomes?

Given the immediate and downstream costs of suboptimal decisions (outcome and process dissatisfaction, misuse of resources, regret, etc.), researchers have sought various ways to shift consumers to a more thorough or efficient decision-making process (Milkman, et al., 2009). In particular, a broad array of recent work on the topic of "choice architecture" highlights the importance of organizing the context in which people make decisions (Hughes, 2013; Thaler & Sunstein, 2008). A common theme in this domain is the ability of benevolent third parties to improve decision outcomes by implementing relatively simple adjustments to the decision environment. My ideas are predicated on the principle of choice architecture, but I add a distinct element of consumer self-sufficiency. Specifically, I present a robust mechanism which may be used by consumers themselves to improve a broad range of decisions: prior elicitation of the benefits sought from consumption. (For clarification, I use the term *benefits* interchangeably with *consumption goals* and *objectives* to describe desired consequences). I also show cases where elicitation fails to help the decision maker, and he/she would actually be better off using instinct, heuristics, or some other process to make a choice.

In the research that follows, I will describe how contemplating desired benefits changes the decision-making process itself, leading to better outcomes most of the time. My main contribution is the development of a simple, novel, and portable process that helps consumers act as their own 'choice architects.' I argue that elicitation helps consumers to place appropriate and stable weight on decision attributes that ultimately

matter at the time of consumption, rather than attributes made salient by the immediate decision context (Payne, Bettman, & Schkade, 1999; Rooderkerk, Van Heerde, & Bijmolt, 2011; Wedell & Pettibone, 1996). Given the inherent link between goal fulfillment—in this case, achieving desired benefits—and subjective outcomes, the net result of this restructuring process should be more satisfying choices. To test my framework, I present a series of studies measuring the impact of elicitation on process and outcome variables within various decision tasks. Additionally, I consider potential 'down sides' of benefit elicitation. Specifically, I present conditions in which the benefit-elicitation→attribute-weighting link is disrupted, having a detrimental effect on decision outcomes. I conclude by considering implications for researchers and practitioners.

Theoretical Background

The consumer choice process is classically defined as "moving from some initial state to a desired state" (Bettman, 1979a). What determines the desired state, and how do consumers tell where they are on the continuum? Philosophical answers to this question vary, but a common measure of successful decision making is the degree of progress toward one or more goals (Keeney & Raiffa, 1993). For many researchers, the concept of choice satisfaction has been closely intertwined with that of perceived goal progress and attainment (Oliver, 1980).

Consumption Goals and Means-End Frameworks

Following the tradition of prior scholarship, I define *consumption goals* as the desired benefits or outcomes a consumer hopes to fulfill by making a choice (Huffman &

Houston, 1993; Reynolds & Gutman, 1988; van Osselaer, et al., 2005). Defined this way, consumption goals bear both similarities and distinctions with other types of goals studied by researchers in related fields. An extensive body of work has been dedicated to the study of *behavioral goals*, by which individuals regulate their behavior consciously and non-consciously to achieve desired actions (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trotschel, 2001; Custers & Aarts, 2005). In the field of judgment and decision making, an influential line of research has evolved around *decision goals* (e.g., effort minimization, accuracy, justification, etc.), and the process by which individuals trade-off between these goals in different decision contexts (Luce, 1998; Payne, Bettman, & Johnson, 1993; Shafir, Simonson, & Tversky, 1993; Simonson, 1989; van Osselaer & Janiszewski, 2012); within this taxonomy, consumption goals represent a subset of accuracy goals, by which consumers seek the normatively-optimal alternative. At a broad level, comprehensive frameworks have recently been developed to illustrate how momentary goal activation influences choice through the selection of means (behaviors or products) that allow individuals to pursue those goals, and how the importance and instrumentality of decision attributes are affected by time and situational factors (van Osselaer & Janiszewski, 2012). My approach builds on these frameworks by presenting a tool by which goal activation is directed by consumers themselves and based on retrieved or recognized preferences. The influence of context (e.g., what happens to be noticed or cued) should thus be minimized.

Of the most direct relevance to my work are classical, hierarchical models of goal-based consumer decision making and its outcomes (Bagozzi & Dholakia, 1999; Gutman, 1982). These approaches present consumers as proceeding through an organized

hierarchy of goals, e.g.: focal goals ("What is it that I want?"); subordinate/means goals ("How can I get what I want?"); and superordinate goals ("Why do I want it?"). More recent research has added greater specificity and refinement to traditional hierarchical frameworks; for example, Huffman et al. (2000) offer a hierarchy including "life themes and values" and "life projects" to "feature preferences." One such hierarchical approach, the laddering method, is a widely-accepted tool for understanding the means-end links that underlie decision outcomes (Gutman, 1982; Reynolds & Gutman, 1988). Although approaches to laddering vary, they typically involve: 1) asking consumers to identify the features (attributes) of a product that drove a recent purchase decision; and then 2) exploring the reasons that those features mattered to the consumer, with questions of increasing abstraction. In essence, laddering allows consumers to reconstruct the process by which product attributes lead to desirable benefits or consequences, which in turn align with ultimate values. For marketers, laddering has proven useful for understanding and communicating with target customers; the tool is used extensively in product development (Langerak, Peelen, & Nijssen, 1999) and serves as the basis for communication models (Reynolds & Whitlark, 1995).

My approach to improving consumer decisions borrows from laddering and the broader notion of means-end hierarchies. However, from a prescriptive standpoint, it is impractical to expect autonomous execution of laddering by consumers themselves in typical choice settings. For example, what specific questions should these consumers contemplate? Concepts such as 'attributes,' 'consequences,' and 'values' are unlikely to be defined or applied consistently, and it is often unclear what level of abstraction is appropriate (Grunert & Grunert, 1995). More generally, the specific methodologies used

can heavily impact the means-end specifications that result. With these concerns in mind, I develop below a straightforward and generalizable approach, based on hierarchical frameworks, through which consumers may independently and efficiently improve decision outcomes. My approach allows consumers to independently travel 'down' the ladder; that is, desired consequences of consumption are considered first, and decision attributes are then evaluated based on their ability to produce these consequences.

Benefit Elicitation

Formally, I define benefit elicitation as the process by which individual consumers explicitly consider and identify the consequences they seek to achieve (Bond, et al., 2008). I operationalize elicited benefits as the various ways in which consumers complete the following sentence: "I would like to choose a [product/service] that allows me to…." For example, a consumer selecting an automobile may complete the above sentence by identifying benefits such as "save money on gasoline;" "keep my passengers safe;" or "extend my legs comfortably while driving."

I offer a simple, self-guided process for use by individual consumers who will select and use products for themselves. My approach can be compared to elicitation in decision analysis and related fields, which involves a process of gathering and identifying objectives, requirements, or expectations for decision makers and stakeholders (Keeney & Raiffa, 1993; Schwarz & Roth-Berghofer, 2003; Sommerville & Sawyer, 1997; Svenson, 1996; Van Lamsweerde, 2001). Decision-analytic applications of elicitation typically involve a multi-phase, collaborative process engaging multiple parties. Analysts conducting elicitation utilize detailed interviews, surveys, simulations, etc., while

facilitating the process by incorporating expert advice, optimization techniques, and customized solutions (Hoffman, Shadbolt, Burton, & Klein, 1995). Although I build on the tenets of this method, my approach is quite distinct from existing work in both substance and application. In contrast to complex, multi-stage interventions targeting groups with multiple stakeholders, I focus specifically on the viability of benefit elicitation as a tool for ordinary consumer decisions.

I restrict my focus to choice settings in which the consumer has at least moderate knowledge and experience with the category under consideration. In these settings, I suggest that the elicitation of benefits can be effectively guided by consumers themselves, with minimal external assistance. In other words, consumers facing an impending decision should be capable of identifying the benefits that they seek to receive from consumption. In general, identification of benefits will involve a combination of memory retrieval and mental simulation: e.g., consumers may recall past experiences with products in the category, making note of benefits that were present or lacking; they may consider experiences of acquaintances who have made decisions in the category; or they may visualize the consumption experience, imagining favorable and unfavorable outcomes. As in decision analysis, therefore, benefit elicitation includes objectives that signified successful outcomes in the past (for oneself or others), and additional benefits that may be unique to the current decision. Below, I will show how failures in memory retrieval and simulation may lead to incomplete goal elicitation and attribute-weighting errors—resulting in undesirable decision outcomes.

The Impact of Elicitation on Decision Processing

Effort and Expectations

Intuitively, the act of eliciting benefits might alter subsequent processing in a variety of ways that impact choice quality or satisfaction. One possibility is that engaging in benefit elicitation will simply increases motivation and subsequent effort towards the decision task. For example, considering desired outcomes of a choice might lead consumers to consider the decision seem more personally relevant or important, in turn causing them to process choice-relevant information more effortfully (Eagly & Chaiken, 1993; Payne, et al., 1993; Petty & Cacioppo, 1986). Given that elaboration tends to enhance performance on complex tasks, increased effort provides a reasonable account for any observed benefits of elicitation.

On the other hand, the act of elicitation might lead consumers to alter their expectations or standards regarding the outcome of a choice. Among various possible scenarios is an upward revision of expectations: that is, after contemplating their desired consumption benefits, consumers may expect to actually find a product that will provide the majority of those benefits (Maheswaran, Mackie, & Chaiken, 1992). Under standard satisfaction models (Oliver, 1977), an increase in expectations could lead to higher satisfaction or lower satisfaction (assimilation or contrast), depending on the quality of options actually provided.

An Attribute-Weighting Account

The accounts above are viable, and I control for them in the studies below. However, my framework presents a very different argument that can be summarized as follows: benefit elicitation impacts decision outcomes through the relative importance

assigned to attributes at the deliberation stage. This proposal is consistent with broad models of goal regulation and pursuit (Carver & Scheier, 1982; Newell & Simon, 1972), in which individuals first identify a desired end state, then seek out ways to reach that state: attributes that are perceived as useful in reaching the desired end state should be assigned greater weight in the decision. In addition, my proposal follows naturally from the means-end conceptualizations discussed above. However, in contrast to traditional laddering, the 'starting point' of benefit elicitation is the desired consequences of a selecting a product, rather than specific attributes or attribute levels. I expect this difference to have important repercussions for the ensuing decision process: by directing consumers to consider desired outcomes *first*, elicitation encourages them to later evaluate attributes based on their value or instrumentality for attaining those outcomes. For example, if the desired outcome when selecting a lunch option relates to healthiness, fat content (high instrumentality) would receive more weight than cooking time (low instrumentality).

Therefore, goal elicitation provides a direct means of addressing the context matching problem pervasive in preference-based decisions (Payne, et al., 1999), in which the value of an option may vary according to the decision context itself. The implications can be illustrated in terms of traditional models of attitude formation and choice (Fishbein, 1963; Shocker & Srinivasan, 1979; Westbrook, 1981). Under these models, consumers choosing amongst a set of options will (implicitly or explicitly) identify attributes of the options, the importance of each attribute, and the level of each attribute provided by each option. However, an immense body of work has documented ways in which attribute weighting can be affected by aspects of the decision environment (Dhar,

Nowlis, & Sherman, 2000; Payne, et al., 1999; Simonson & Tversky, 1992; Suk & Yoon, 2012). Even seemingly "irrelevant" contextual features (information format, order of presentation, ambient factors, etc.) can have dramatic influence on which decision attributes are noticed and how they are appraised. A natural consequence is not only instability in revealed preferences, but also (and more important for present purposes) reduced likelihood of satisfaction if attributes that matter for consumption go unnoticed or mis-weighted during choice. For example, a consumer shopping for a laptop may over-weight the fingerprint reader on a given model, simply because the salesman highlighted its uniqueness. The consumer may focus more on *salient* attributes (those which happen to be noticed or remembered) than on *relevant* attributes (those which can achieve goals) (Van Ittersum, Pennings, Wansink, & Van Trijp, 2007).

For consumers who have undergone elicitation, however, choice processing will be directed according to the benefits elicited. An important assumption is that elicitation occurs in advance of the decision process, so that consumers are distanced from the immediate choice environment and focus instead on 'things that will mater' during ultimate consumption. If so, the elicitation process enables consumers to effectively align the decision context more closely with the consumption context. Rather than focusing directly on product attributes themselves, they will consider and weight attributes based on their ability to provide desired benefits (Garbarino & Johnson, 2001; van Osselaer, et al., 2005). As a result, these consumers who have engaged in benefit elicitation will be less susceptible to elements of the decision that are unlikely to affect satisfaction. For example, assume that an automobile shopper identifies (in advance) the benefit "saves me money on gasoline" as critical and the benefit "allows me to transport a lot of cargo" as

moderately important. When exposed to the options available, this consumer will incorporate attributes such as 'gas mileage' and 'trunk size' in her evaluation – and assign greater weight to the former – even if the salesman happens to emphasize the latter. Stated differently, prior elicitation should lead to a distribution of attribute weights that is less context-dependent and more representative of actual consumption, increasing the likelihood of a subjectively and objectively 'better' choice.

Specifically, I expect that elicitation will tend to improve decision outcomes, as a result of an attribute weighting process that reflects ultimate consumption rather than the immediate decision environment. Moreover, this effect of should occur independently from any effects of elicitation on effort or expectations regarding the choice. Subject to certain moderators, which I will discuss later:

H1: Independent of effort or expectations, elicitation of benefits in advance of a decision will lead better outcomes.

Incomplete or Limited Elicitation

What consequences will obtain when relevant consumption goals are omitted during elicitation? Prior evidence indicates that individuals are not always comprehensive in identifying their decision objectives (Bond, Carlson, & Keeney, 2010). Furthermore, a stream of research in the attitude literature, stemming from the work of Wilson and Schooler (Wilson & Schooler, 1991), shows that individuals often lack insight into the reasons underlying their own preferences. To the extent that consumers are unable to sufficiently introspect about drivers of their ultimate consumption utility, elicitation may be hampered or counterproductive. In the extreme, asking consumers to identify desired

benefits may even disrupt an otherwise reasonable decision process, producing suboptimal choices.

I expect the goal-driven attribute weighting process to falter when goals relevant to consumption are left unconsidered during elicitation. In particular, decision attributes that relate to omitted goals will tend to be mis-weighted. More generally, I predict that when elicitation is constrained, revealed attribute importance weights will be systematically distorted and less reflective of their actual importance at consumption, such that decision quality suffers. Stated formally:

H2a: The omission of goals during an elicitation task will lead to distortion in the revealed importance weights of attributes relevant to those goals.

H2b: The omission of goals during elicitation will lead to lower satisfaction.

Instrumental and Determinant Attributes

Even when the decision maker thoroughly identifies his/her consumption goals, elicitation may not lead to desirable outcomes. The attributes used to describe an assortment can vary greatly, and these attributes can directly affect the decision maker's ability to infer or predict what consequences or outcomes will follow consumption. In some cases, attributes merely provide a description (e.g. color). Other times, attributes directly indicate what the product will do for the consumer (e.g. miles per gallon). For goal elicitation to be effective, the decision maker must not only thoroughly identify the benefits he/she seeks in consumption, but also be able to allocate decision weight appropriately to the attributes that will provide the desired benefits. The extent to which

the decision involves two particular types of attributes, instrumental and determinant, can have a tremendous influence on the weighting process, and therefore the effectiveness of goal elicitation.

Particularly relevant to my discussion are those attributes which serve as a means to an end, or which lead to a clear understanding of the benefits provided; these are known as instrumental attributes (Cohen, 1979; Lefkoff-Hagius & Mason, 1993; Swan & Combs, 1976). The instrumentality of a given attribute actually depends upon the decision maker's desired benefits. For example, color would be instrumental for a consumer seeking benefits related to appearance, but not for a consumer with goals related to size or weight.

As described above, I theorize that goal elicitation improves decision outcomes by leading the decision maker to appropriately weight product attributes in accordance with the benefits he/she seeks. Thus, the effectiveness of elicitation depends upon the decision maker's ability to correctly interpret the instrumentality of attributes. Consumers who engage in goal elicitation will have benefits in mind when they evaluate product attributes, and they may erroneously infer instrumentality even when none exists (e.g., inferring quality from price, even if the two are not correlated). The resultant weighting of attributes that have no bearing on the decision outcome may nullify the effect of goal elicitation, or worse—lead to suboptimal decisions.

In addition to instrumentality, another consideration is whether an attribute is regarded as important and differentiates a product alternative by its mere presence; such characteristics define a determinant attribute (Alpert, 1971; Arnold, Ma, & Tigert, 1978; Myers & Alpert, 1968). When a determinant attribute is present, it often receives a

majority of the decision weight. As described above, the choice context itself may lead the decision maker to perceive an attribute as determinant; for example, a salesperson, a friend's advice, or signage could highlight the presence of a single attribute, which then becomes over-weighted. If the attribute is not actually instrumental in achieving desired benefits, decision outcomes will suffer. My argument thus far suggests that goal elicitation improves choice outcomes by leading the decision maker to weight an array of instrumental attributes, rather than over-weighting a single, determinant attribute.

However, if the determinant attribute is actually highly instrumental, the decision maker may arrive at a favorable outcome simply by applying a decision heuristic or a lexicographic decision rule: "If [determinant attribute] is present at [level], buy." In the presence of a diagnostic determinant attribute, the careful consideration of desired benefits is unnecessary, as decision quality is entirely dependent on the determinant attribute—not on a broader array of attributes. If goal elicitation leads the decision maker to erroneously under-weight the instrumental determinant attribute, decision quality will suffer. Given the characteristics of instrumental and determinant attributes, I predict:

H3: When instrumentality is limited to a single determinant attribute, goal elicitation will lead to worse decision outcomes.

Overview of Studies

I present five experiments investigating consumption goal elicitation and decision making. Studies 1 and 2 examine my primary hypothesis that elicitation produces more positive decision outcomes, independently of expectations or effort. Studies 3a and 3b

explore the effects of limited or incomplete elicitation on attribute weighting and subjective outcomes. Finally, Study 4 tests additional predictions within my framework, in which benefits of elicitation are reversed in the presence of determinant, instrumental attribute.

Study 1: Impact of Goal Elicitation on Satisfaction

As an initial test of my framework, Study 1 investigated whether the elicitation of consumption goals can by itself lead more satisfying choices. Participants in the study chose among eight video clips based on summary descriptions, viewed their chosen clip, and reported measures of satisfaction. Prior to the choice, half the participants engaged in goal elicitation and half completed a filler task. In addition, measures of effort and expectations were assessed to rule out accounts based on these variables.

Method

Participants

One hundred thirty-four undergraduate business students at a large southeastern university participated in the study in exchange for class credit.

Design and Procedure

The entire study was administered by computer. Participants were informed that they would be selecting and viewing an instructional video about peeling boiled eggs

(this topic was selected because it is relevant to a broad audience, the videos would be unfamiliar, and their format and content vary widely). Next, they were randomly assigned to one of two groups: control or elicitation. To ensure that the timing of the study was similar for both groups, participants in the control group received a filler task in which they were asked to describe their activities on a typical day in a free-response, paragraph format. Participants in the elicitation group underwent a procedure involving three steps. In the first step, they were asked to reflect and write down the goals that they consider important for choosing an instructional video (see figure 3.1); space was provided for up to 20 goals. In the second step, they were presented with a 'master list' of potential consumption goals (figure 3.2). The master list was developed by the researchers through an iterative procedure, and included a wide variety of goals such as "…allows me to relate to the person giving the instructions" and "…helps me learn about peeling boiled eggs in general". Participants were instructed to identify from the list any goals that they deemed personally relevant. In the third step, they were asked to specify the importance of their selected goals by allocating 100 total importance points among them.

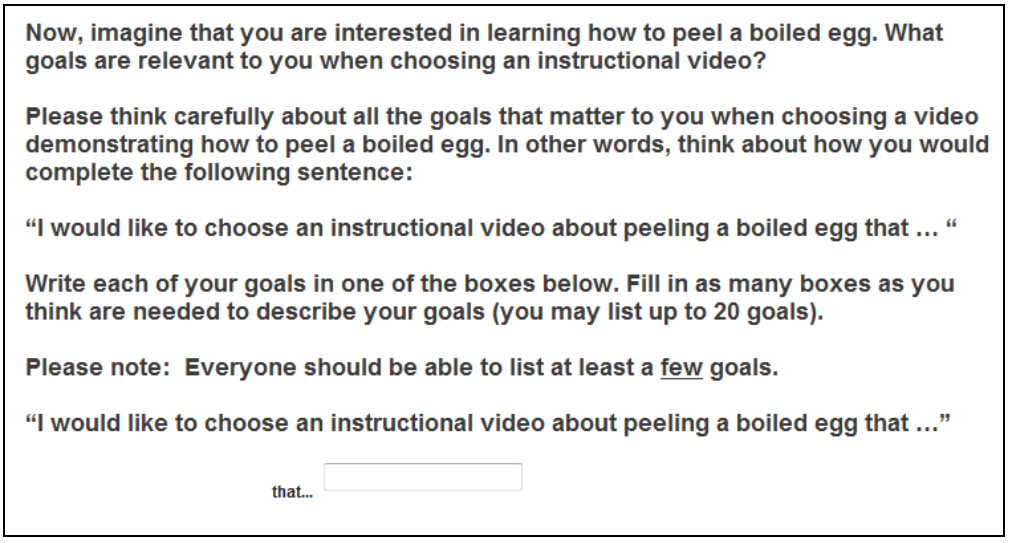

Figure 3.1: Goal Elicitation Task (Study 1)

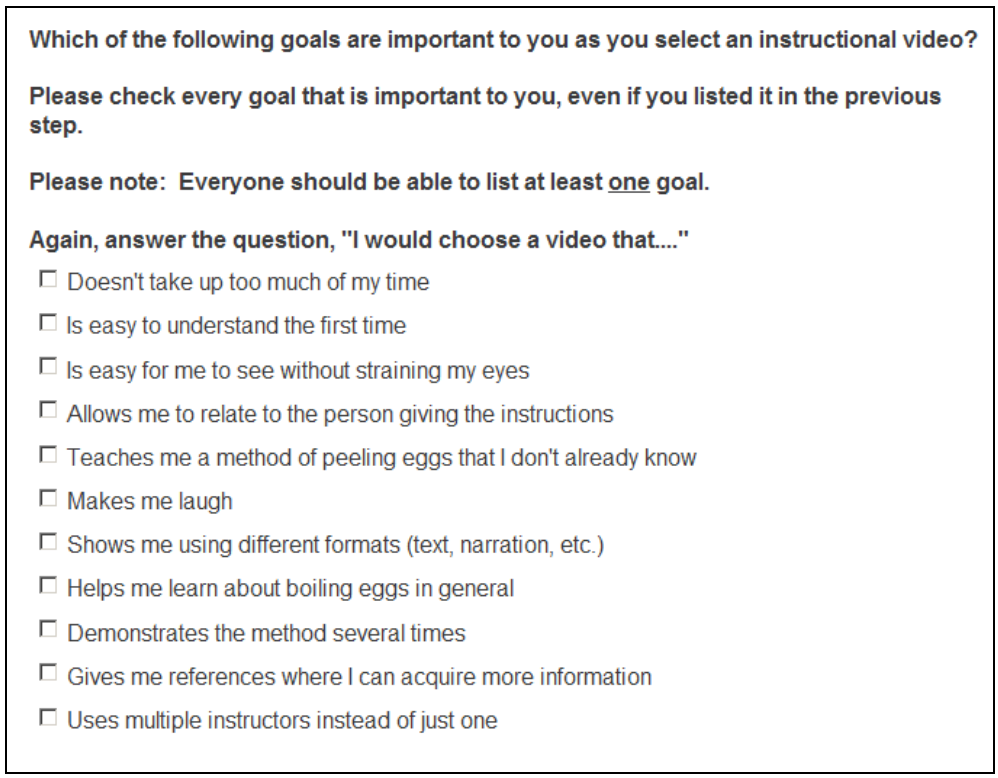

Figure 3.2: Master List for Elicitation Task (Study 1)

Next, all participants were shown paragraph descriptions of eight different video options, and asked to choose one video to view. Each description began by providing information about a common set of attributes (e.g., running length, picture quality, sound), then provided specific information about the content of the video (see figure 3.3). After participants had reviewed the options and made their decisions, their chosen video opened in a new window on the screen. After viewing the video, participants completed a questionnaire about their viewing experience which contained the measures described

below. Finally, participants were asked their opinions about the purpose of the study, thanked, and debriefed.

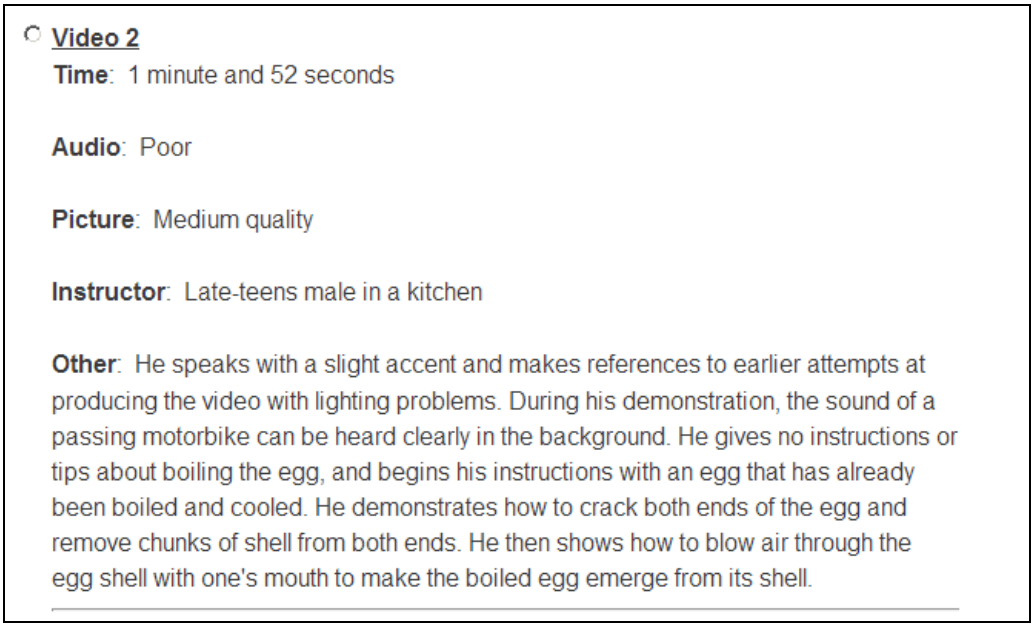

Figure 3.3: Sample Video Description (Study 1)

Decision Outcomes

Overall satisfaction was measured by a 100-pt. slider scale (0=”Very Dissatisfied, 100=”Very Satisfied”). Attitude was measured with four items (negative vs. positive; bad vs. good; unappealing vs. appealing; ineffective vs. effective), also utilizing 100-pt. slider scales.

Expectations and Effort

Expectations were assessed after participants had read the descriptions of available options but not yet made their selections. Participants were asked how satisfied they expected to be with their chosen video, using a 100-pt. slider scale (0=”Very

Dissatisfied, 100=”Very Satisfied”). As a measure of decision effort, the software recorded the amount of time (in seconds) that participants spent deliberating among the video descriptions.

Results

An examination of the suspicion check revealed that no participants guessed the purpose of the study. One participant entered strings of zeroes for the elicitation and dependent measures; removing this participant resulted in a sample size of 133.

Participants in the elicitation condition identified an average of 2.4 goals from the master list. The most popular goals selected were “doesn’t take up too much of my time” (selected by 43% of participants) and “is easy to understand the first time” (also 43%). The goals rated most important were “…makes me laugh” (M=40.17 among participants selecting this goal) and “…gives me external references where I can acquire more information” (M= 35.36).

For the main analysis, I conducted two separate ANOVAs in which outcome satisfaction and attitudes toward the chosen video were compared across the control and elicitation groups. An initial check confirmed that the attitude items were highly correlated (α=.95), so they were averaged to form a composite attitude score. The pattern of results for satisfaction and attitude are depicted in figure 3.4.

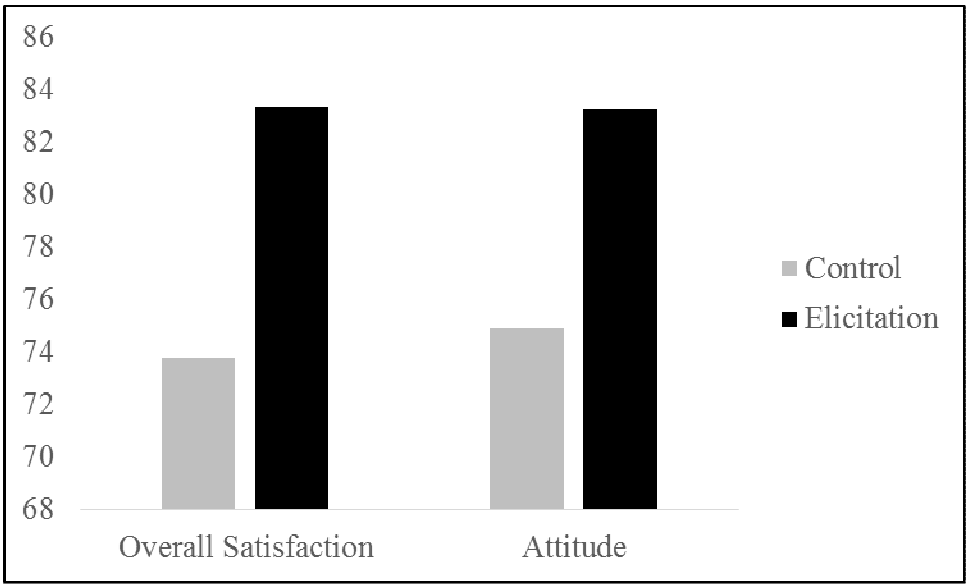

Figure 3.4: Decision Outcomes (Study 1)

Supporting my prediction, results of both ANOVAs yielded significant effects of goal elicitation. Overall satisfaction was higher among participants in the elicitation condition than those in the control condition ($M_{Elicitation}$=83.34, $M_{Control}$=73.78; F(1,132)=4.88, p<.03). In addition, attitude towards the chosen video was significantly more positive for the elicitation condition ($M_{Elicitation}$=83.22, $M_{Control}$=74.93, F(1,132)=4.55, p=. 04). These results confirm that participants benefitted from identifying their consumption goals in advance of the decision.

Next, I examined the evidence for alternative accounts. In contrast to the argument that undergoing elicitation changed participants' expectations regarding their choice outcome, ANOVA revealed no significant difference in expectations between elicitation and control conditions ($M_{Elicitation}$=75.48, $M_{Control}$=73.28; F(1,132)=.56, p=.45). Similarly, in contrast to an account based on changes to the effort expended in

selecting a video, ANOVA revealed no significant difference in deliberation time between the two conditions ($M_{Elicitation}$=95.93, $M_{Control}$=88.13; F(1,132)=0.738, p=.39). As an additional test, I conducted new, separate ANOVAs on both the satisfaction and attitude measures, in which I controlled for effort and expectations. In both cases, the effect of elicitation remained significant (satisfaction: F(1,129)=4.30, p=.04; attitude: F(1,129)=4.05, p=.05). These results suggest that the observed benefits of elicitation were not an indirect result of changes to effort or expectations.

Discussion

The results of Study 1 provide initial evidence that prior identification of consumption goals can improve subsequent decision outcomes. Contemplating and identifying benefits that were ultimately desired led participants to make choices that were more satisfying. Moreover, goal elicitation did not substantially alter participants' expectations of satisfaction or the effort they devoted to the task. Together, these findings support H1. Study 2 uses a more objective measure to evaluate decision outcomes following goal elicitation.

Study 2: Effects of Elicitation on Objective Choice Outcomes

In Study 1, I examined how formally identifying their consumption goals before making a decision improved participants' subjective choice satisfaction. In Study 2, I use an objective measure of decision performance: choice of non-dominated alternatives.

Method

Participants

Seventy-six US residents participated via Mechanical Turk for payment.

Design and Procedure

Participants were told that the study involved decisions related to a backpacking tent ("the most familiar kind of tent…used in hiking, camping, and other outdoor recreation, as a means of shelter"). Participants were randomly assigned to one of two conditions: control or goal elicitation. In both conditions, participants were told to imagine that they were in the market for a backpacking tent. Participants in the goal elicitation condition were presented a screen like the one in figure 3.5, which asked them to list the benefits they seek when choosing a backpacking tent ("I would choose a backpacking tent that…"). Room was provide for as many as 20 benefits, and there were no time constraints. Participants in the control condition received no further instructions.

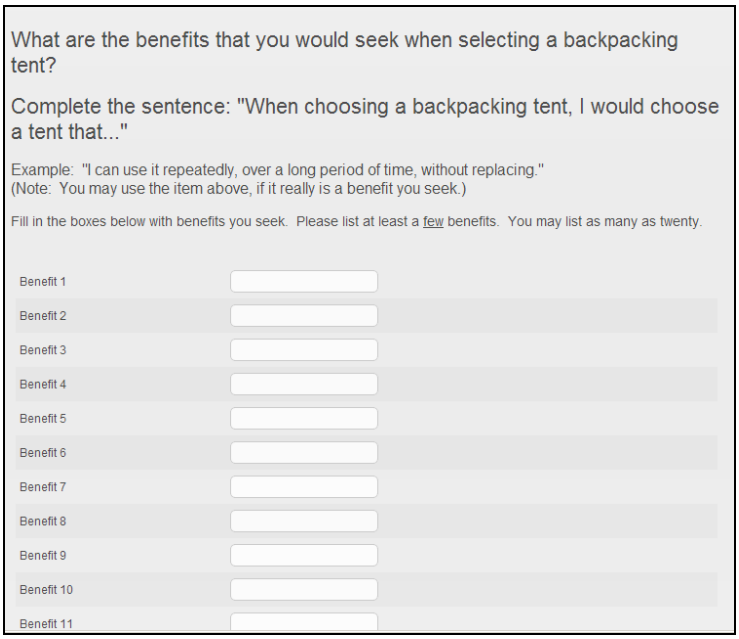

Figure 3.5: Goal Elicitation Screen (Study 2)

All participants then proceeded to the choice task. An introductory screen indicated that participants would be viewing an array of 54 different tents with different features (brand, fabric, weight, etc.), and that they should carefully evaluate the tents and choose the one they considered best. Next, participants in the goal elicitation condition were reminded of the benefits they listed in the previous step. Afterwards, all participants proceeded to the tent-selection screen (figure 3.6). The tents were adopted from stimuli created by Häubl & Trifts (2000). Each tent was described using eight features. Within each brand, there was a dominating option, with the optimum level for each feature. Participants could click on a hyperlink within the choice screen to view definitions of the different features (figure 3.7). Only one tent could be chosen, and there were no time constraints. Participants could view only one tent at a time—they first selected the brand from one drop-down box; next, they selected the model from a second drop-down box;

finally, the individual tent's features were revealed when they clicked a third drop-down box. A notes area was provided, to allow participants to record potential brands and models in their consideration set.

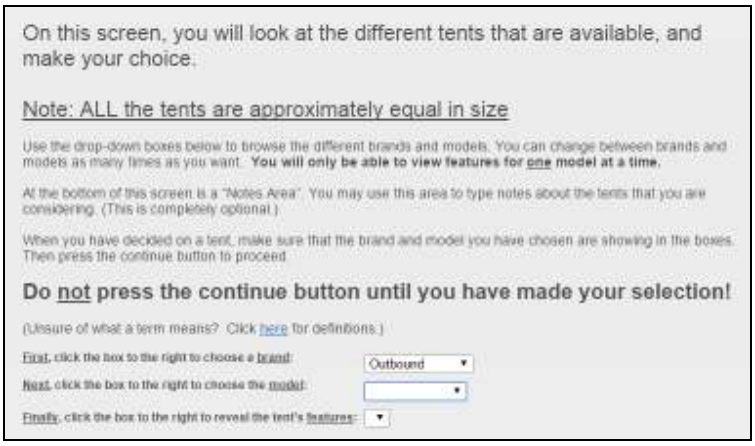

Figure 3.6: Tent Choice Screen (Study 2)

Pole Material: Describes the strength of the aluminum poles supporting the tent.

Fly Fabric: Describes the tent's construction fabric, including type and weight.

Weight (kg): Describes how heavy the tent is when folded and packed. 1 kg = 2.2 lbs.

Durability Rating (0-100): Describes how well the tent endures harsh conditions, and how well it holds up over time.

Vestibule: Describes whether or not the tent has a separate area to store gear, take off boots, or dine away from the sleeping area.

Warranty (years): Describes how long the manufacturer will repair/replace the tent under certain conditions.

Figure 3.7: Tent Feature Definitions (Study 2)

After making their choice, all participants completed two additional measures: 1) "If other tents were available, do you think you would choose a different one instead?" (Yes or No), and 2) "How confident were you in your choice of backpacking tent, at the time you made your choice?" (1=very unconfident…7=very confident). Finally, an open-ended item asked them to describe how and why they made their choice.

Dependent Measures

Analyses involved three primary dependent measures, adopted from Häubl & Trifts (2000). First, I measured whether a non-dominated tent was selected. Of the 54 tents, six were superior or equivalent to the other 48 on all attributes; there was a single non-dominated tent for each brand. I also measured participants' desire to switch to another alternative and their degree of confidence, as described above. Additionally, choice time (in seconds) and number of clicks were collected to measure participants' effort.

Results

Participants in the goal elicitation participants listed an average of 6.4 benefits; popular goals included "contains insulation for warmth," "will last a long time with repeated usage," "does not cost too much," and "is easy to carry."

In the main analysis, I compared the choice of non-dominated alternatives across conditions (figure 3.8). An overall chi-square test indicated significant differences in the choice shares by condition (χ^2 (1,76) = 4.29, p<.04). Participants in the control condition

were significantly less likely to choose non-dominated tents than those who underwent goal elicitation ($M_{Control}$=34.2% vs. M_{Goals}=57.9%).

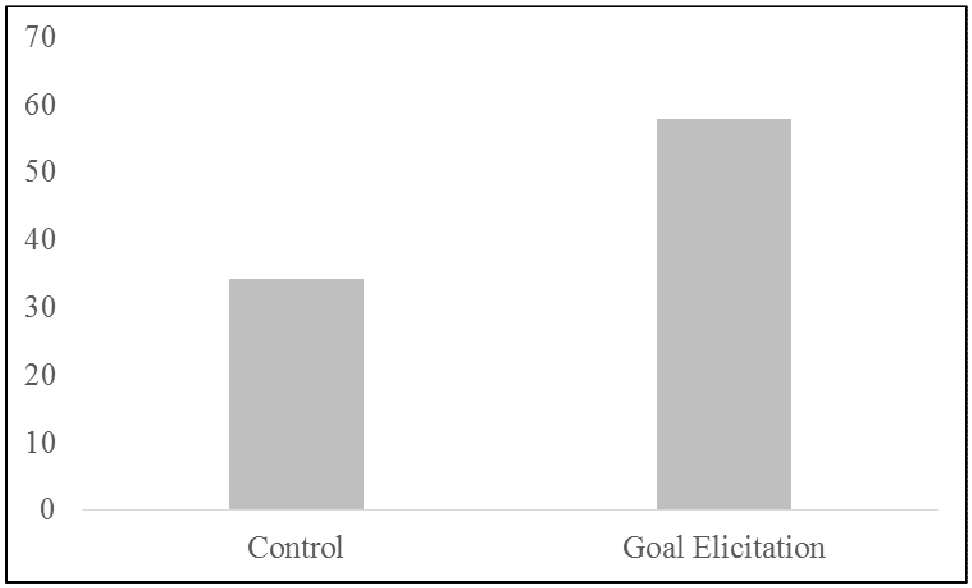

Figure 3.8: Choice Shares (Study 2)

Next, I analyzed switching behavior across conditions. An overall chi-square test revealed significant differences between intentions to switch (χ^2 (1,76) = 5.07, p<.03). Participants in the control condition were significantly more likely to switch tents than those who underwent goal elicitation ($M_{Control}$=32% vs. M_{Goals}=10.5%).

Analyses of choice confidence indicated no significant differences in confidence between control and goal elicitation (($M_{Control}$=4.74 vs. M_{Goals}=5.13; F(1,74)=1.12, p>.2). Effort measures were also submitted to one-way ANOVA analyses. Results revealed no significant differences across conditions for choice time ($M_{Control}$=224.56 vs.

M_{Goals}=182.12; $F(1,74)$=.97, p>.3) or number of clicks ($M_{Control}$=86.63vs. M_{Goals}=72.68; $F(1,74)$=1.32, p>.2).

Discussion

The results of Study 2 provide additional evidence that goal elicitation improves decision outcomes, in support of H1. Participants who identified their desired benefits before making a decision were more to choose a non-dominated alternative and were less likely to express switching intentions, indicating that elicitation produced higher objective decision quality and confidence. Furthermore, these results did not appear to be driven by extra effort during the decision task. Studies 3a and 3b explore a problem that might arise during the identification process—incomplete or limited elicitation—and the resulting effects on attribute weighting and satisfaction.

Study 3a: Decision Outcomes under Constrained Elicitation

Studies 1 and 2 were intended to demonstrate the downstream benefits of consumption goal elicitation. In Study 3a, I compare the decision outcomes of individuals that have engaged in no prior elicitation to the outcomes of individuals who have engaged in either constrained or unconstrained elicitation. As in Studies 1-2, I expected that prior elicitation of desired consumption benefits would affect the weighting of decision attributes, leading to better outcomes. However, I expected the benefits of elicitation to attenuate when relevant goals were omitted from the process. Furthermore, comparing types of elicitation will elucidate whether it is the mere act of thinking of benefits (in

constrained elicitation) or a thorough consideration of goals (unconstrained elicitation) that actually improves outcomes.

Method

Participants

Two-hundred-one undergraduate students at a southeastern US university participated in the study in exchange for class credit.

Design and Procedure

The study incorporated a design similar to Study 1, with three main exceptions. First, the master list of potential goals was refined to include 15 items (see figure 3.9). Second, the extensiveness of the elicitation task was varied across two conditions (elicitation and constrained elicitation): participants in the elicitation condition were presented a complete 'master list' of all 15 potential consumption goals, while participants in the constrained elicitation condition were presented the same list with five goals omitted. Three different versions of the incomplete list were created—each version omitting five different goals—and participants in the constrained condition received one of these versions at random. Finally, the open-ended portion of the elicitation task was dropped, to ensure that omitted goals not be brought to mind during the elicitation procedure.

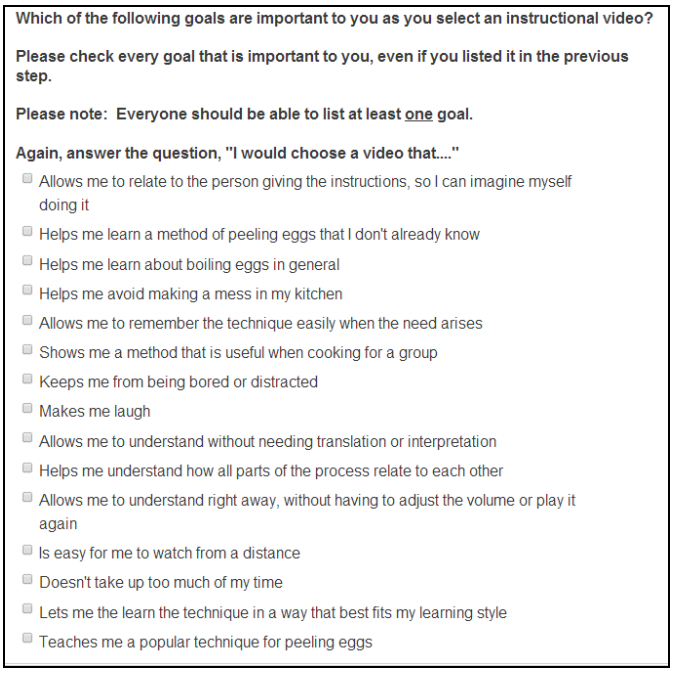

Figure 3.9: Full Master List (Study 3a)

The procedure was virtually identical to that of Study 1. After being told that they would be choosing between instructional videos, participants received the elicitation manipulation. Those in the elicitation and constrained elicitation conditions viewed a list of potential goals (described above), checked the goals they deemed relevant, and then rated their importance; the control condition completed the same filler task used in Study 1. Next, all participants viewed descriptions of eight instructional videos, selected one video, and viewed their selection. Afterwards, they completed measures of satisfaction and attitude using 100-point slider scales. Finally, participants were asked about the purpose of the study, thanked, and debriefed.

Results

Examination of the suspicion check revealed that no participants accurately guessed the purpose of the study. Five participants were excluded after reporting that they were unable to view their selected video, leaving a sample size of 196 participants. On average, the elicitation condition identified 6.42 goals from the master list, while the constrained condition identified 4.74 goals from the list (this is not surprising, given that five goals were omitted for the constrained group). The goals rated most important were "allows me to remember the technique easily when the need arises" and "helps me learn about boiling eggs in general."

An initial examination confirmed that the four attitude items were highly correlated (α=.97), so the items were averaged to form a composite attitude score. In the main analysis, I conducted two separate ANOVAs in which satisfaction and attitudes were compared across the control, elicitation, and constrained elicitation groups. The patterns of means for satisfaction and attitude are depicted in figure 3.10.

For satisfaction, analysis via ANOVA revealed an overall main effect of condition ($F(2,194)=3.15$, $p<.05$), so planned follow-up contrasts were performed. Consistent with my framework and the findings of Study 1, satisfaction was significantly higher for participants in the elicitation condition than those in the control condition ($M_{Elicitation}=79.53$, $M_{Control}=67.74$; $t=2.35$, $p=.02$). Additionally, and also consistent with my framework, satisfaction was significantly higher under elicitation than constrained elicitation ($M_{Constrained}=70.92$; $t=2.15$, $p=.04$). The difference in satisfaction between control and constrained conditions was not significant ($p>.4$). For the attitude measure, a similar pattern of results was observed. Analysis via ANOVA revealed an overall effect

of condition ($F(2,194)=3.32$, $p=.04$). Follow-up comparisons revealed that, as predicted, attitudes were significantly more positive under elicitation than either control ($M_{Elicitation}=79.68$, $M_{Control}=68.44$; $t=2.47$, $p=.015$) or constrained elicitation ($M_{Constrained}=72.02$; $t=2.08$, $p=.04$). The difference between control and constrained conditions was not significant ($p>.3$).

As in Study 1, I examined the evidence for alternative accounts based on changes to outcome expectations or decision effort. In contrast to these accounts, separate ANOVAs revealed no significant effect of condition on either expectations ($F(2,194)=0.13$, $p>.8$) or effort ($F(2,194)=0.81$, $p>.4$). As additional evidence, I conducted new, separate ANOVAs for satisfaction and attitudes, while controlling for effort and expectations. In both analyses, the effect of condition remained significant (satisfaction: $F(2,192)=3.66$, $p<.03$; attitude: $F(2,192)=3.47$, $p=.03$), and follow-up comparisons revealed statistically significant patterns identical to those in the main analysis.

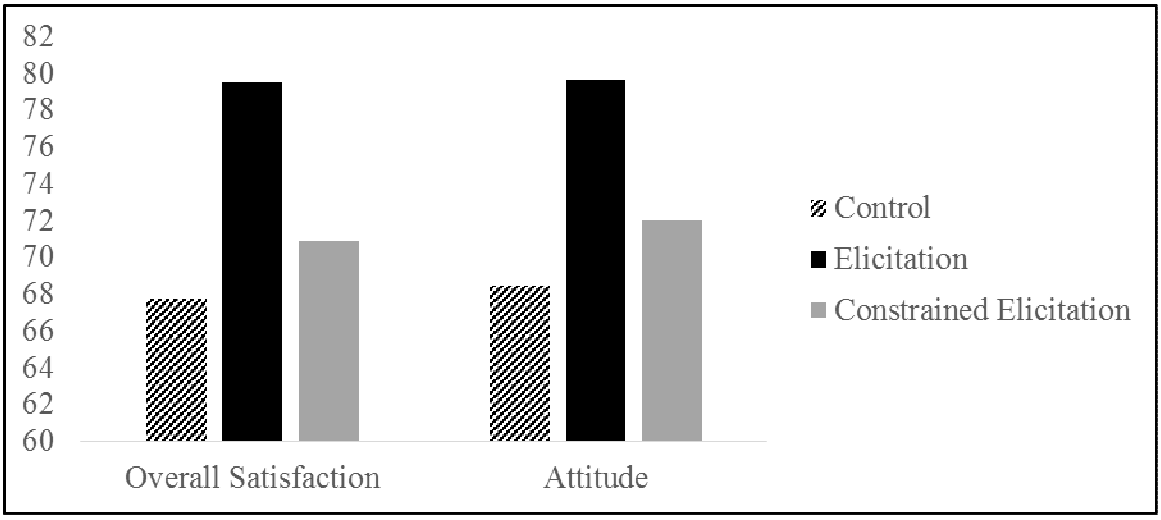

Figure 3.10: Decision Outcomes (Study 3a)

Discussion

Results of Study 3a extend the findings of the prior studies, providing further evidence that prior elicitation leads individuals to focus their decision process on the relative extent to which available options are likely to satisfy elicited goals. When the elicitation process is unconstrained, this focus improves the match between decision and consumption contexts, resulting in a more appropriate weighting of decision attributes and a more satisfying choice. However, in support of H2b, when elicitation is constrained by the omission of relevant goals, the match between decision and consumption contexts is inferior, resulting in a mis-weighting of attributes and a reduction in the benefits of elicitation. Additionally, Study 3a provided evidence that outcomes are improved by thorough elicitation and the true consideration of one's goals—not simply motivating the decision maker to casually/incompletely think about what matters *in general*. Study 3b explores the proposed underlying process by directly manipulating the effects of goal elicitation on attribute weighting.

Study 3b: Goal Elicitation and Attribute Weighting

In Study 3a, I demonstrated how decision outcomes are worse for constrained elicitation than for unconstrained/thorough elicitation. To clarify the attribute-weighting mechanism behind these outcome differences, Study 3b presented three groups of participants with a hypothetical decision between automobiles. Participants observed detailed attribute profiles for eight different automobiles and provided their preference

rankings. Prior to viewing the automobile profiles, two of the three groups completed a consumption goal elicitation task. The elicitation procedure was constrained for one of these two groups the omission of goals from consideration. In order to enable a directional prediction, I selected these omitted goals so that underweighting of relevant attributes would be expected (see below). For the analysis, I utilized conjoint analysis to derive the importance weight of each participant for each attribute, and then compared the average importance of attributes across the three groups.

Method

Participants

Two-hundred-six US residents participated on Mechanical Turk for payment.

Design and Procedure

The cover story asked participants to assume that they were interested in acquiring an automobile, and that they had already narrowed their consideration set to eight options. They were told that they would be viewing information about the eight options and indicating their preferences.

Participants were assigned randomly to one of three conditions: control, elicitation, or constrained elicitation. In the control condition, participants were simply shown an introductory screen explaining the subsequent task. Participants in the elicitation condition were given the same introduction and then asked to identify their consumption goals from a master list of 18 possible goals (e.g., "I would choose an

automobile that keeps me and my passengers safe"). Figure 3.11 depicts the master lists used in the elicitation procedure.

Participants in the new, constrained elicitation condition performed a similar task with one important exception: two goals were omitted from the master list. To decide which goals would be omitted, I first conducted a separate pretest in which 151 participants were presented with a list of 12 automobile attributes and asked to rate the importance of each attribute. Based on this pretest, 'trunk size' and 'paint color' were selected as attributes that mattered to most participants but were moderate in importance. Next, I identified the two goals on the master list that mapped most directly to these attributes ("that can hold a lot of cargo (groceries, luggage, etc.)"; "that I will appreciate in terms of color, style, and appearance"), and I removed these two goals for the constrained condition. (Because high-importance goals are often activated without elicitation, and low-importance goals are unlikely to be activated even with cues from a master list, I decided to use moderate-importance goals in the manipulation).

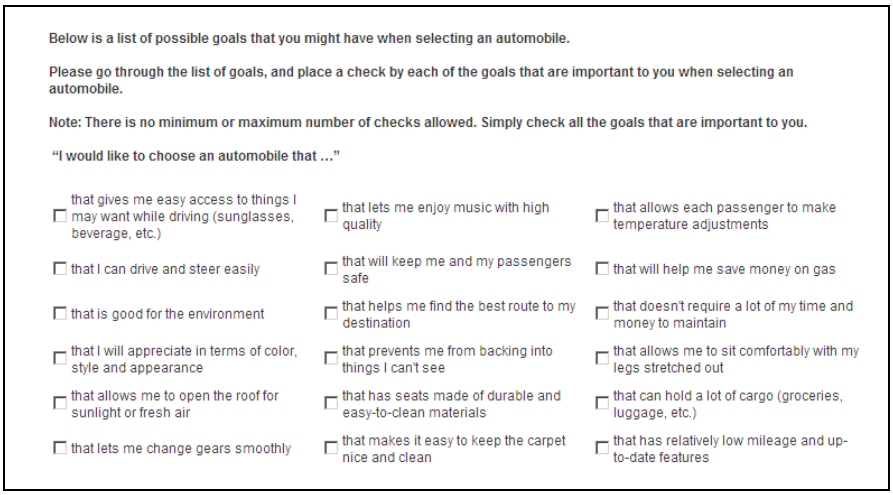

Figure 3.11: Master List for Selecting an Automobile (Study 3b)[4]

All participants then proceeded to the ranking task, where they viewed attribute information about eight different automobiles, presented in a table format (see figure 3.12). The table included six different attributes (legroom, safety, trunk, colors, age, and handling), chosen so that each mapped directly back to a goal on the master list (e.g., the "safety" attribute mapped directly back to the goal "that will keep me and my passengers safe"). Each attribute assumed one of two possible values ('large' or 'small' for trunk; 'newer' or 'older' for age, etc.). The configuration of options was orthogonal across all six attributes, so that the eight automobiles comprised a comprehensive subset of possible attribute combinations (Wu & Hamada, 2011).

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[4] In the constrained elicitation conditions, the following two goals were omitted: "that can hold a lot of cargo (groceries, luggage, etc.)," "that I will appreciate in terms of color, style, and appearance."

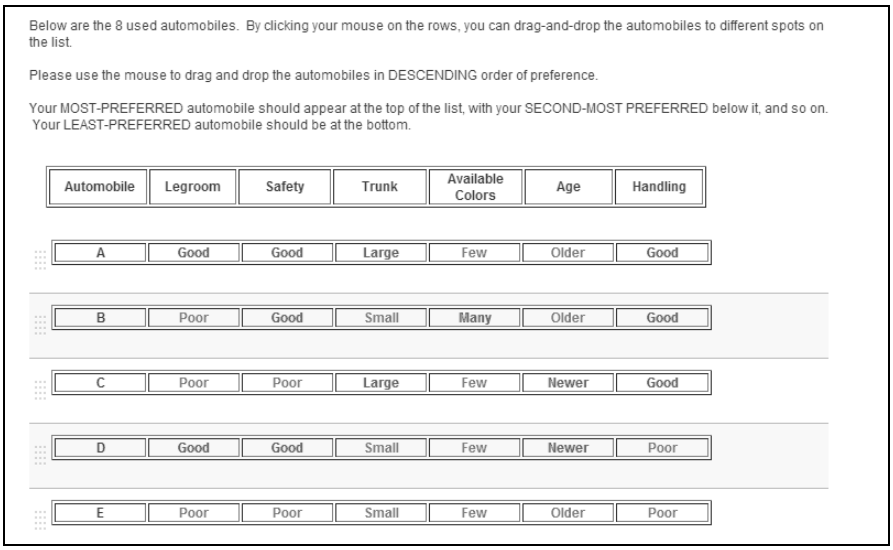

Figure 3.12: Ranking Task (Study 3b)

Participants were asked to arrange the eight automobiles in order of preference by using a drag-and-drop procedure, so that their highest-ranked option was placed at the top. No time limit was imposed. After completing the ranking task, participants responded to various background questions (including age, gender, driving experience, and automobile ownership). Finally, they were thanked and dismissed.

Results

On average, the elicitation condition checked 10.54 goals from the master list, and the constrained elicitation group checked 9.20 goals (this difference was not surprising, given that two goals were omitted from the latter condition). Prior to the analysis, data were screened according to three criteria determined in advance. Ten participants in the elicitation groups chose fewer than five goals from the master list. Ten participants spent an unrealistic amount of time on the ranking task (speed more than +2 SD, i.e. less than 238 seconds). Finally, two options in the ranking task included a dominance relationship,

and seven participants were excluded for assigning a higher ranking to the dominated option. Screening resulted in a sample size of 179 participants. (All significant results reported below remain significant when the entire sample is included).

In the main analysis, the relative importance weights of each participant were calculated for each of the six attributes, by use of conjoint analysis with ordinary least squares (e.g., Green and Srinivasan (1978)). The procedure involved two steps. First, the rankings assigned by a participant to each option were regressed on the levels of the six attributes represented by that option, yielding beta coefficients for each attribute level. Second, the difference between maximum and minimum beta coefficients was calculated for each attribute, yielding the importance for that attribute.

To investigate my hypothesis, I focused on the two attributes mapping to goals omitted in the constrained elicitation condition (trunk size and paint color). Confirming the results of the pretest, these two attributes received only modest importance weights (M=7.35)—compared with 'safety' (M=37.78) for example, which received the greatest weight. The primary dependent measure, omitted_importance, was formed for each participant by summing the weights assigned these two attributes. Based on my argument that prior goal elicitation influences decision processing through the weighting of goal-relevant attributes, less weight should be allocated to attributes associated with goals that were not active during the evaluation process. Thus, I expected omitted_importance to be lower in the constrained condition.

In the main analysis, I conducted an ANOVA comparing omitted_importance across the three conditions. Results indicated a significant overall effect, (F(2,176)=3.50, p=.03), so planned follow-up comparisons were conducted. Comparisons revealed that

omitted_importance was significantly lower in the constrained condition than the elicitation condition ($M_{Constrained}$ =11.94, $M_{Elicitation}$=16.31; t=2.42, p=.02) or the control condition ($M_{Control}$=15.82; t=2.15, p=.03). Importantly, elicitation did not artificially inflate the weights of the two focal goals, as omitted_importance for the elicitation and the "natural/instinctive" control conditions did not significantly differ (t=.273, p>.5). Stated differently, the weight assigned to the two focal attributes was lower when attribute-relevant goals were omitted from elicitation in advance of the decision. These results support my interpretation that prior elicitation of consumption goals led participants to weight decision attributes in light of those goals; therefore, when goals were omitted from the elicitation process, attributes related to those goals were underweighted.

Discussion

The results of Study 3b provide process-level evidence consistent with the framework developed earlier. Specifically, constrained elicitation of consumption goals led to systematic underweighting of attributes, as compared with complete/thorough elicitation and "natural" control conditions. These findings support both H2a and my general argument regarding the mechanism through which elicitation produces more satisfying decision outcomes, in which consumers are better prepared to trade off attribute information at the decision stage by focusing on the implications of those attributes for the benefits that they ultimately desire. In Study 4, I explore how product attributes may impede the weighting process following elicitation, nullifying or even reversing the effects of identifying desired benefits prior to a decision.

Study 4: Goal Elicitation Leads to Lower Satisfaction

I theorize that the effectiveness of goal elicitation in improving decision outcomes depends on 1) the extensiveness of goals identified during elicitation and 2) the type of attributes present during the decision process. Studies 3a and 3b provided evidence for the first caveat by demonstrating how incomplete or constrained elicitation leads to reduced satisfaction and under-weighted attributes. Study 4 addresses the second stipulation by varying the presence of determinant and instrumental attributes. Participants in the study chose among four short stories based on a set of attributes, then read their chosen story, and reported their satisfaction. Prior to the choice, half the participants engaged in goal elicitation and half did not. Half the participants viewed story descriptions containing a single instrumental/determinant attribute and five non-instrumental attributes; the other half viewed similar descriptions which included an additional instrumental attribute. I expected reduced satisfaction among participants who identified their consumption goals and chose from stories with a single instrumental/determinant attribute.

Method

Participants

Two-hundred US residents participated via Mechanical Turk for payment.

Stimuli

Short stories were deemed appropriate task stimuli for the study, because readers often disagree on what makes a "good" story, and because stories can be described via the presence or absence of determinant and instrumental attributes. Also, a story can be read in a relatively brief amount of time, allowing for consumption and satisfaction measures in a single study. Furthermore, short stories create a more robust choice environment to measure satisfaction, as instructional videos (in Study 1 and Study 3a) are somewhat novel and atypical.

I sought one short story that participants were likely to enjoy, and three stories that were likely to be dissatisfying, so that the determinant attributes used to describe the stories would truly be instrumental in achieving outcomes. In pretests, the story "Before/After" (taken from EastoftheWeb.com) was rated highly by readers, while "The Sudden Walk" (from the Internet Speculative Fiction Database) was rated poorly. "On Pedagogy" (taken from the ACT standardized testing website) was officially designated as a poorly-written story, while "Food Chronicles" (from FanFiction.net) was included because of its poor grammar and deplorable plot.

Design and Procedure

The entire study was administered by computer. Participants were informed that they would be selecting and reading short stories. Next, participants were randomly assigned to one of two groups: control or elicitation. Participants in the elicitation group underwent a procedure in which they were asked to consider and write down the goals that they consider important for choosing a short story (see figure 3.13); space was

provided for up to 20 goals. An example goal ("I can read in a relatively brief time period") was offered to facilitate the elicitation process.

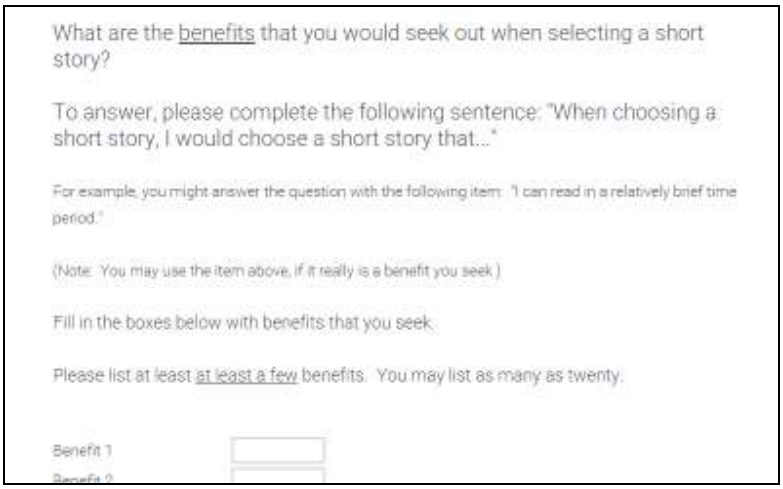

Figure 3.13: Goal Elicitation Task (Study 4)

Next, all participants were shown descriptions of four different short stories (detailed in the Stimuli section, above) and asked to choose one story to read. A between-subjects design was used for the attributes in the story descriptions. All participants saw story descriptions including an instrumental/determinant attribute (average rating—which actually indicated story quality and would be solely sufficient for choosing the best story) and five non-instrumental attributes (title, year published, language, and word count—none of which was predictive of story quality). Half of the participants saw an additional instrumental attribute (summary), while the other half did not (see figure 3.14). After participants had reviewed the options and made their decisions, they were asked how satisfied they *expected* to be with their chosen story (0-100). The story appeared on the

subsequent screen. After reading it, participants indicated their overall satisfaction with the story (0=”Very Dissatisfied, 100=”Very Satisfied”). They were then asked how they selected their story, using an open-ended measure—which I planned to code based on the attributes mentioned. Finally, participants answered an instructional manipulation check question (similar to those used by Oppenheimer et al. (2009)), which required participants to read a paragraph in its entirety in order to correctly execute specific, counter-intuitive instructions.

Figure 3.14: Short Story Descriptions (Study 4)

Results

Sixteen participants who failed the instructional manipulation check were removed from the sample, leaving 184 responses for the analyses. Participants in the

elicitation condition identified an average of 4.7 goals. The most commonly-listed goals related to story length and enjoyment.

For the main analysis, I conducted a two-way ANOVA in which outcome satisfaction for the chosen story was compared across elicitation (control vs. goals) and summary (present vs. absent). The pattern of results is depicted in figure 3.15.

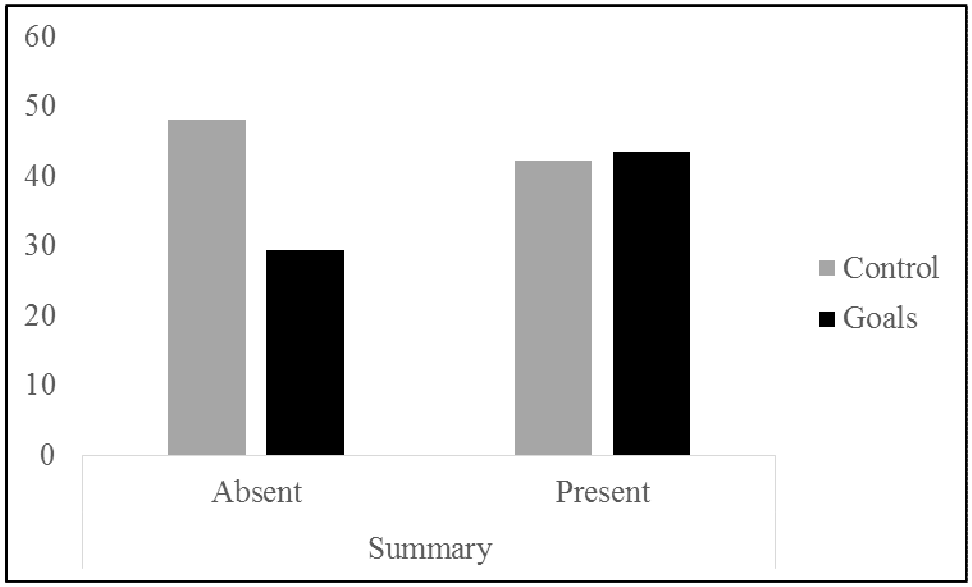

Figure 3.15: Overall Satisfaction (Study 4)

Analyses via ANOVA revealed a marginal main effect of elicitation (M_{Goals}=36.2, $M_{Control}$=45.1; $F(1,183)=3.27$, $p=.07$) and no main effect of summary ($M_{Present}$=42.8, M_{Absent}=39.5; $F(1,183)=.73$, $p>.3$). As predicted, however, analyses revealed a significant elicitation*summary interaction ($F(1,180)=4.21$, $p=.04$). For participants given an additional instrumental variable, in the form of a summary, elicitation conditions did not reliably affect satisfaction (M_{Goals}=43.5, $M_{Control}$=42.3 $F(1,180)=.03$, $p>.8$). When

summary was absent, participants who identified their goals before the decision were significantly less satisfied (M_{Goals}=29.4, $M_{Control}$=48.1; F(1,180)=7.44, p<.01).

Analysis of the expectations measure revealed that consistent with prior studies, expectations did not differ significantly between elicitation conditions (M_{Goals}=63.09, $M_{Control}$=65.22; F(1,183)=.56, p>.5) or summary conditions ($M_{Present}$=66.14, M_{Absent}=62.4; F(1,183)=2.42, p>.12), nor was the elicitation*summary interaction significant (F(1,180)=1.98, p>.16).

Reasons Analyses

When no summary was provided, I expected participants who underwent goal elicitation to weight multiple attributes in their decisions, while control participants should focus primarily on the single instrumental/determinant attribute (average rating). I coded the open-ended 'reasons' question according to the attributes mentioned (1=yes, 0=no, for each attribute). The elicitation*summary interaction was directional but not significant for the number of attributes mentioned (F(1,180)=2.4, p>.12); participants in the goal elicitation condition cited significantly more attributes than control participants when no summary was given (M_{Goals}=1.52, $M_{Control}$=1.22; F(1,180)=5.68, p<.02) but not when a summary was given (M_{Goals}=1.49, $M_{Control}$=1.46; F(1,180)<.04, p>.8). Also, an overall chi-square test revealed marginal differences in mentions of the average rating (χ^2 (1,184) = 2.85, p=.09). Participants in the control condition were directionally more likely to mention rating than those who underwent goal elicitation ($M_{Control}$=45.6% vs. M_{Goals}=33.3%).

I also expected goal-elicitation participants to over-weight non-instrumental attributes in the decision, when no summary was given. An overall chi-square test

revealed significant differences in mentions of the title of the story (χ^2 (1,184)=10.41, p<.01). Among subjects in the summary-absent condition, the goal-elicitation group cited the title of the story significantly more than the control group (M_{Goals}=76.2% vs. $M_{Control}$=42.9); on the other hand, subjects in summary-present condition cited title only around 13% of the time, and this effect did not differ across elicitation conditions (p>.21). Satisfaction was significantly lower among participants who mentioned title as a reason for choosing a story (M_{Title}=32.61, $M_{NoTitle}$=45.86; F(1,182)=6.94, p<.01), confirming that this was a non-instrumental attribute. Mentions of other attributes did not differ significantly across elicitation or summary conditions.

Discussion

Results of Study 4 provide evidence that goal elicitation may not always be advantageous for decision makers, but may in fact be harmful when the decision attributes provided are non-instrumental in achieving desirable outcomes. In the presence of a single instrumental/determinant attribute, participants who underwent goal elicitation were more likely to disregard or under-weight critical information (rating) and make a less-satisfactory choice. Satisfaction was no different among elicitation conditions when two instrumental attributes were provided. Collectively, these results provide evidence for H3.

General Discussion

My research on consumption benefit elicitation supplements a variety of existing work on consumer goals, means-end linkages, and choice structuring. My basic premise was that explicit identification of benefits prior to a decision fundamentally changes subsequent decision making, by altering the importance assigned to specific decision attributes. In five studies, I demonstrated the effects of benefit elicitation on decision processing and ensuing outcomes. Studies 1 and 2 confirmed that elicitation leads to improved decision outcomes, and that these effects are not driven by changes to effort or expectations. Study 3a provided an important caveat contingent with my framework: when the elicitation process is constrained, its benefits for subsequent decision making can be attenuated. Study 3b supported my process framework by demonstrating that the weighting of attributes changes systematically when specific benefits are excluded from the elicitation process. Finally, Study 4 demonstrated that the advantages of goal elicitation depend on the consumer's ability to map their goals onto instrumental attributes.

Theoretical Implications

At a basic level, I have argued that benefit elicitation helps consumers to identify 'what will actually matter' at the time of consumption. When consumers begin by explicitly stating the benefits that they seek from a product or service, their subsequent decision making will be directed towards these benefits, increasing the likelihood of choosing an option that provides them (greater satisfaction). This idea is consistent with the prescriptive implications of the context matching principle, in which decision makers

are advised to structure their decision environment to provide a context similar to that in which outcomes will be experienced (Payne, et al., 1999). In my setting, the simple act of benefit elicitation allows consumers to improve the match between decision and consumption contexts. As a result, they should be less subject to transient influences within the immediate decision environment, whether those influences come from internal factors (motivation, attention, mood, etc.) or from aspects of the choice itself (information format/order, complexity, choice set configuration, etc.).

More broadly, I suggest that elicitation provides a means by which consumers may act as their own "choice architects," (Thaler & Sunstein, 2008) structuring their decisions in a systematic manner that is conducive to positive outcomes. In principle, the elicitation process is simple, portable, and applicable to a vast array of decisions: consumers consider the benefits that they desire, weight attributes accordingly, and thereby make choices that are less susceptible to 'irrelevant' contextual cues. Furthermore, given that that elicitation is guided by consumers themselves, it is relatively immune to the criticisms of paternalism sometimes directed towards interventions based on the choice architecture framework (Hausman & Welch, 2010). However, as demonstrated in my studies, the benefits of elicitation depend on the consideration of a wide range of potential factors. To the extent that third parties such as salespeople and advertisers influence the benefits considered (constructively or destructively), they are still capable of impacting decisions. In the practical implications below, we provide examples by which third parties influence the elicitation process.

By arguing that elicitation enables consumers to remain focused on their desired benefits during the decision process, my ideas overlap with prior work on the role of

decision mindsets. According to mindset theory (Gollwitzer & Bayer, 1999), decision makers tend to adopt a cognitive orientation to decide *which* benefits will lead to desired outcomes (deliberative mindset), followed by a functional orientation to decide *how* to achieve these benefits (implemental mindset). Applying this logic to my framework, I speculate that the process of benefit elicitation evokes a deliberative mindset, as consumers identify the benefits that specific benefits that they seek, and that it also facilitates the transition to an implemental mindset at the choice stage, as consumers evaluate the options in terms of their instrumentality for achieving the identified benefits. In contrast, I speculate that participants who have not identified their benefits in advance are more likely to oscillate between deliberative and implemental mindsets, simultaneously re-assessing the importance of attributes as they re-evaluate the options along those same attributes. 'Switching mindsets' is associated with a wide range of negative consequences (Hamilton et al. (2011), and if my speculation is correct, elicitation provides a means of addressing the problem.

According to the classic 'lens model' and other probabilistic models of judgment and perception, individuals estimate the value of an unknown criterion by integrating cues in the environment which correlate with that criterion (Hammond & Stewart, 2001). Applied to consumer research (e.g., Holbrook (1981); Meyer (1981)), the 'criterion' often represents satisfaction that will result from product purchase, and 'cues' represent observable product attributes. Therefore, the task of the consumer is to integrate ambiguous attribute information to form an accurate estimate of their likely satisfaction from each option. The lens-type frameworks offer a compelling perspective on the value of benefit elicitation. With or without prior elicitation, consumers will often be inaccurate

in gauging the diagnostic value of individual attributes, and they will often fail to combine attribute information in a normative manner. However, elicitation facilitates the process in two distinct ways. First, elicitation helps consumers to identify and utilize valid cues (i.e., attributes that relate to eventual satisfaction). For example, Huffman and Houston (1993) demonstrated that when decision makers are assigned specific goals in advance, they are more likely to encode attribute information relevant (vs. irrelevant) to those goals. Second, as demonstrated across my studies, elicitation improves the ability of consumers to integrate cues in a consistent and systematic manner, based on their relative validity rather than transient aspects of the decision setting. Of course, as I demonstrate in my final study, there are circumstances in which elicitation may effectively 'blind' the decision maker to vital cues such as instrumental, determinant attributes.

Practical Implications

My findings suggest that satisfaction with a choice can increase substantially when consumers devote modest time and effort in advance of a decision to consider the benefits that they seek. Therefore, external parties who benefit from consumer satisfaction (retailers, brands, consumer advocates, etc.) would often be well advised to encourage and assist in the elicitation process. At the retail level, for example, there are numerous techniques that might be used to encourage shoppers to engage in elicitation prior to their purchase decisions. In offline settings, these triggers might take the form of appropriately worded signs, displays, or trained salespeople advising shoppers to consider the goals they have for making a purchase. In online settings, triggers could range from

simple messaging on product category pages to more interactive interventions (e.g., a pop-up window asking "What are the benefits you want from a [product]?") Importantly, prompts should encourage a focus on ultimate outcomes ("save money," "peace of mind," etc.) rather than product attributes ("low price," or "great warranty," etc.). However, these tools are only advisable when decision outcomes are not entirely dependent on a single, determinant attribute; in these cases, highlighting the key attribute—rather than providing a means of eliciting goals—is advisable.

In some cases, consumers may be motivated to identify their desired benefits but lack the knowledge or expertise to do so comprehensively (Bond, et al., 2010). Assistance for these consumers may involve helping them to identify and choose among various potential benefits (much like the 'master list' in my studies). For many product categories, potential benefits can be derived from the criteria used by experts, reviewers, etc. to classify products in the category. For example, *Consumer Reports* considers "firmness" when evaluating mattresses; a related benefit might be stated as "I would choose a mattress that keeps my spine properly supported." More sophisticated approaches are possible in environments where customer-specific data is available. For example, in a manner similar to recommendation agents, an online retailer might prompt consumers with a targeted set of potential benefits: "Here are some benefits that shoppers like you have been interested in..." I have shown that incomplete or constrained elicitation may fail to improve outcomes, so it is critical for consumers to be offered many opportunities to thoroughly identify their desired benefits.

Taking a different perspective, it is worth noting that benefit elicitation could play a valuable role in helping firms to differentiate their brands. A straightforward

implication may be stated as follows: "If there is a specific benefit that your product(s) will uniquely provide target consumers, then encourage the elicitation of that benefit early in the buying process." As an example, the Greek yogurt brand FAGE brand applies parchment paper to the surface of its products – a unique attribute that satisfies benefits related to both taste and freshness. Through its advertising, packaging, etc. therefore, the brand might encourage the elicitation of benefits related to that attribute ("avoid wasted time and effort stirring," "enjoy fresh yogurt whenever I feel like it," etc.) These benefits may not be obvious to the typical yogurt shopper (who focuses on flavor or nutritional profile), and thus may be omitted if no cues are provided.

Limitations and Future Research

As an initial test of my framework, my studies contained a number of limitations. All of the studies involved hypothetical choices; moreover, all but one involved a novel choice of relatively minor importance (e.g., choosing a short video or short story). Although I expect the effects to be robust, future work should explore benefit in different decision environments. For example, all four studies involved a relatively modest number of attributes for each alternative in the choice set (e.g., six automobile features), and it is uncertain that the impact of elicitation would be similar if the number of attributes was substantially greater. Similarly, my studies utilized a setting in which distractions were minimized and participants were actively engaged in the choice. By the addition of time constraints, cognitive load, etc. to the task, future research might investigate the effect of such constraints on the number of benefits identified, the process by which attributes are evaluated and weighted, and subsequent decision outcomes.

Most of the outcome measures used in my studies were subjective (satisfaction and attitudes). Although these represent common measures of decision quality in preferential choice research, there exists no consensus on the most appropriate measure. With this in mind, alternative outcome measures (such as choice of non-dominated alternatives, which I actually measure in Study 2) should be considered and explored. For example, are choices made after elicitation more or less stable over time? In other words, given the same choice set on two separate occasions, are consumers more likely to choose the same option when they have engaged in elicitation? Additional measures might make use of more 'objective' standards. For example, do choices made after elicitation align more closely with the choices of experts, the recommendations of personalized agents, etc.? I predict that the benefits of elicitation would continue to exist across these alternative measures, but the question remains open.

For many types of decision, specific goals are automatically activated by the decision itself, without formal elicitation (Carlson, Tanner, Meloy, & Russo, 2014; Shah & Kruglanski, 2002). For example, it is unlikely that automobile consumers would completely overlook the goal of safety (and attributes related to that goal), whether or not that benefit has been identified in advance. Importantly, my findings suggest that elicitation will influence the weight that non-obvious, moderately-important attributes receive relative to more-obvious ones. The specific direction of this influence is unclear and worthy of investigation. In contrast, when consumers have undertaken the exact same decision repeatedly, the decision can become "routinized" (Howard & Sheth, 1969) to the point that it occurs without minimal cognitive effort or elaboration. In such cases, I

expect the conscious consideration of benefits to have little impact. Future research could examine this possibility.

A related question concerns the influence of benefit elicitation at varying levels of consumer expertise. On the one hand, experts may be especially capable of accurately identifying their desired benefits, so that the elicitation process would be particularly beneficial for this group. On the other hand, prior work demonstrates that at high levels of expertise, consumers become less likely to engage in effortful processing (e.g., information search (Johnson & Russo, 1984)). To the extent that effort is needed to interpret attribute information in terms of ultimate benefits, experts may be less likely to invest that effort, reducing the benefits of elicitation. Novices, on the other hand, may lack the consumption vocabulary to articulate their desired benefits, so elicitation may be a questionable solution for this group of consumers as well. These ideas offer intriguing opportunities for extending my work, and I look forward to future research in this area.

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